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The OIL AND GAS JOURNAL

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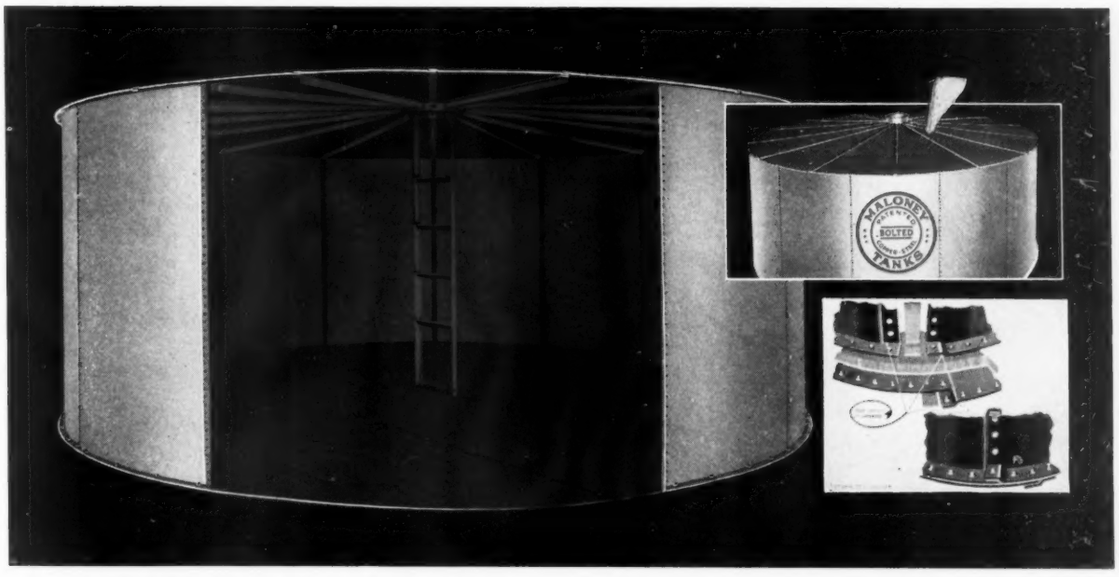

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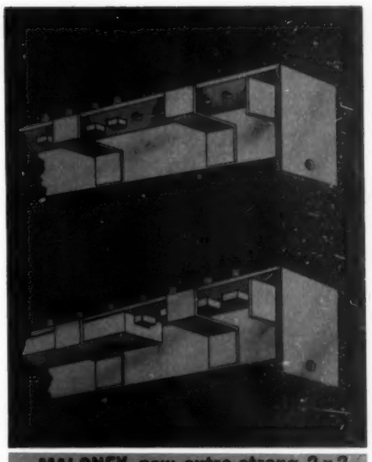

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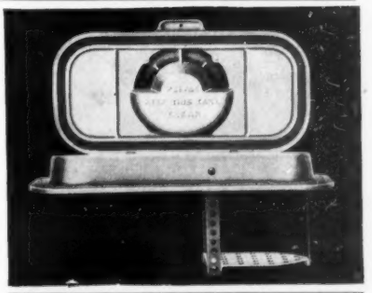

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THE OIL AND GAS JOURNAL

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OIL MAN'S CALENDAR

March

21-23—Wichita, Kans., American Association of Petroleum Geologists, annual meeting.

27-28—Kansas City, Mo., Missouri Oil Men's Association, President Hotel.

29—Hutchinson, Kans., Kansas Chapter, A.P.I.

April

2—Los Angeles, Pacific Coast district, A.P.I. Division of Production.

4—Los Angeles, California Natural Gasoline Association.

4-5—Excelsior Springs, Mo., Western Petroleum Refiners Association, annual meeting.

8-13—Houston, Tex., Oil Equipment and Engineering Exposition.

10-11—Amarillo, Tex., American Petroleum Institute Mid-Continent Production Division, spring meeting, Herring Hotel.

10-11—Indianapolis, Ind., Indiana Independent Petroleum Association, spring convention, Hotel Severin.

11-13—Dallas, Tex., Petroleum Industry Electrical Association, Baker Hotel.

18-19—Cleveland, Ohio, National Petroleum Association, semiannual meeting, Hotel Cleveland.

25-26—San Antonio, Tex., American Petroleum Institute Southwestern Production Division, Plaza Hotel, spring meeting.

May

1-3—Tulsa, Natural Gasoline Association of America, Hotel Tulsa.

6-9—Memphis, Tenn., Natural Gas Department, A.G.A., Peabody Hotel.

8-11—Tulsa, Oil and Gas Power Division of A.S.M.E., Mayo Hotel.

14-16—Tulsa, American Petroleum Institute, fifth mid-year meeting, Mayo Hotel.

June

20-21—State College, Pa., Pennsylvania Grade Crude Oil Association, annual meeting.

September

25-27—Atlantic City, N. J., National Petroleum Association, annual meeting, Hotel Traymore.

November

4-5—Dallas, Tex., I.P.A.A., annual convention.

11-14—Los Angeles, American Petroleum Institute, sixteenth annual meeting, Biltmore Hotel.

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Now you can have all the advantages of a leak-proof back pressure valve in your drilling string without any of the disadvantages of previous devices for this purpose.

The long-wearing alloy steel body with tool joint threads is placed at any point in the string *and left there*. The abrasion-resisting valve assembly rests on a shoulder in the streamlined cavity of the body and is held securely in place by the tool joint pin above it. The entire valve assembly can be lifted out or replaced by hand when this one joint is broken.

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Here's what you gain by using the Bakwik Drill Pipe Float:

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- *Reverse circulation at any time by unseating the back pressure valve.*
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- *Less danger in case of a parted drilling string.*
- *All around Safety.*

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Reduction of Allowable in East Texas Is Asked Because of Drop in Bottom Hole Pressure

By JAMES McINTYRE

THE United States reached a new high in crude oil production for 1935 in the past week, with a daily average of 2,624,784 bbls., an increase over the previous week of 78,821 bbls. Oklahoma and California were mainly responsible for the increase. Kansas reached a new production peak with a daily average of 149,741 bbls.

The Texas Railroad Commission has been asked for a reduction in the allowable production of the East Texas Field because of an average 11-pound reduction in bottom hole pressure over the past month. Chief Petroleum Engineer Gordon Griffin asks that the allowable be lowered from 3.6 per cent of the hourly potential to 3.45 per cent, estimating the production on April 1 on the lowered basis at 434,847 bbls. One hundred and eighteen new tests were authorized in the East Texas Field in the past week, while only 80 completions were recorded. At that rate the new work is exceeding the completed work by nearly 20 per cent.

Recent estimates on the ultimate production per acre of the Fitts Pool in Pontotoc County, Oklahoma, range from 20,000 to 25,000 bbls. of oil per acre, with no estimate made on the productive acreage.

A revival of activity in the field is shown in North Louisiana and Arkansas. To what extent the renewed activity in North Louisiana may be attributed to the success of South Louisiana operations, cannot be said. The South Louisiana, or Coastal Pools, have overshadowed the northern fields of late and Louisiana will this year reach a new high record in production by reason of the richness of some of its southern pools. Of the 120,355 bbls. of average daily production credited to the state in the past week over 80 per cent of it came from the southern fields.

In the Texas Coastal Fields a closely watched test of the Humble Oil & Refining Co. in northern Chambers County was re-completed at a depth of 7,088 feet, but made only 12 bbls. per hour of which 18 per cent was cut oil and it may be killed and worked over as the showing is unsatisfactory. An 850-bbl. well in the new Dickinson Field in Galveston County was a feature of the week.

A new pool has been opened in on the Sheep Creek structure in Fremont County, Wyoming, at a depth of 2,195 feet.

A 250-bbl. Dundee sand well extended the producing area in Churchill and Mills townships, Ogemaw County, Michigan. Floods have delayed many operations in the state.

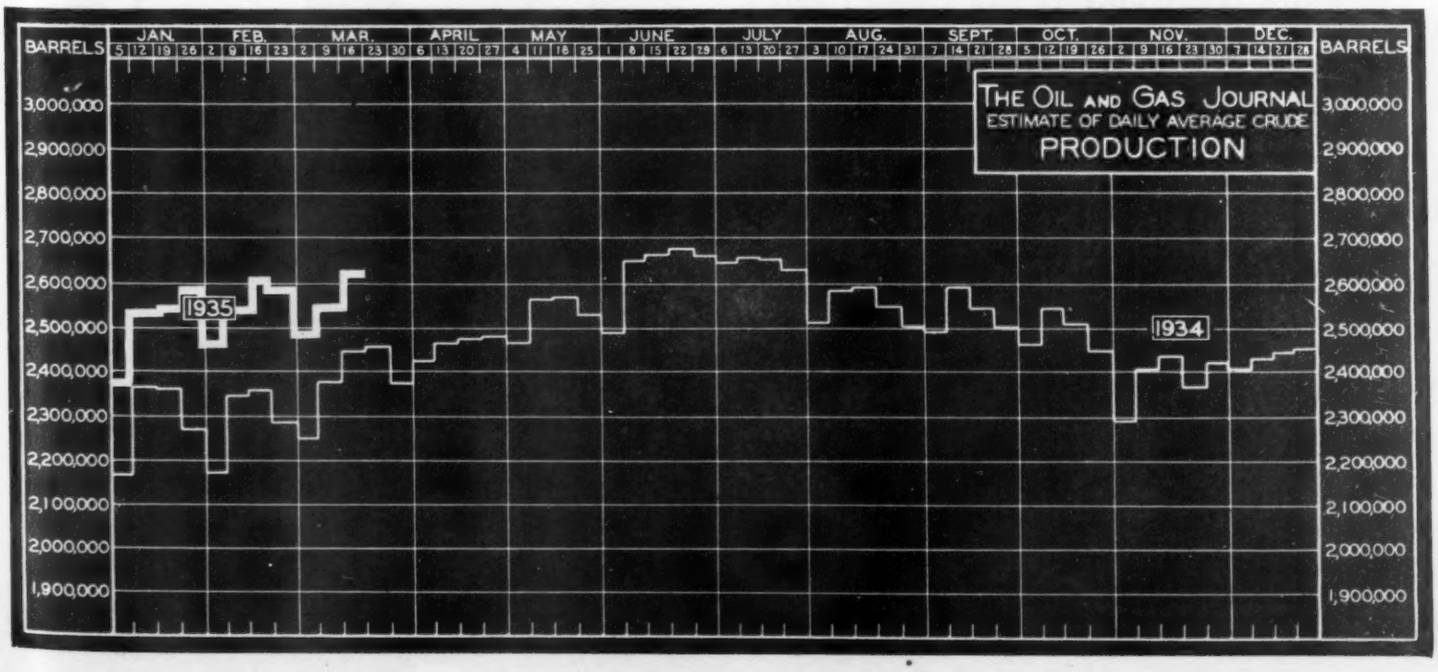
A seamen's strike has paralyzed coastal shipping of oil in California and threatens more serious effects if oil shippers are forced to curtail their runs for lack of shipping facilities for crude oil and refined products.

Crude Oil Production in the United States

Estimated daily average production for the week ending March 16, and a comparison with previous week and the Federal allowables follow:

	March 16	Federal allowable in March	March 9
Oklahoma—			
Oklahoma City	162,900	.....	136,450
Seminole-St. Louis	99,825	.....	85,575
Remainder of State	248,084	.....	235,625
Total Oklahoma	510,809	491,000	457,650
East Texas—			
Lathrop	160,302	.....	160,224
Kilgore	151,718	.....	150,341
Joiner	146,624	.....	148,617
Total East Texas	458,644	.....	459,182
West Texas	145,898	.....	148,865
North Central Texas	90,257	.....	89,554
Texas Panhandle	60,562	.....	55,967
East Central Texas	52,387	.....	52,521
Gulf Coast—Texas	179,169	.....	178,771
Southwest Texas	59,730	.....	59,983
Total State of Texas	1,046,647	1,020,100	1,044,843
Kansas	149,741	139,700	143,625
North Louisiana	23,175	.....	22,525
Gulf Coast—Louisiana	97,180	.....	95,873
Total Louisiana	120,355	110,500	118,398
Arkansas	30,795	31,900	30,430
Eastern Fields (except Michigan)	104,750	105,500	105,000
Michigan	36,867	31,600	31,927
Rocky Mountain Area	94,320	97,400	92,940
California—			
Santa Fe Springs	39,750	.....	39,900
Long Beach	69,750	.....	70,600
Mountain View	14,100	.....	12,700
Elwood	9,500	.....	9,100
Kettleman Hills	61,100	.....	67,350
Remainder of State	336,300	.....	321,500
Total California	530,500	492,600	521,150
Total United States	2,624,784	2,520,300	2,545,963

Increase 78,821 Bbls. Daily.



The Bulletin Board

World's Deepest Oil Well is being produced by gas lift using compressors powered by electric motor and a new offset will be drilled by electric power. The deep well is Denver Producing & Refining Company's No. 1 A-Dah-Noe, producing from 10,100 feet. The offset is No. 1 Sah Cam, to be drilled by the same company. The location is C SE SE Section 33-10-10w, Caddo County, Oklahoma.

•

Acid Treatment of oil wells analyzed with relation to chemical and physical properties points way to better technique.

•

NRA Extension considered certain in Washington as administration regains control in Congress.

•

Wood Substructure using split ring connectors adapted to building of special type of heavy drilling derrick foundations on Gulf Coast.

•

Exports of Petroleum and petroleum products showed increase during past year, Department of Commerce reports.

•

Holding Company bill amendment proposed by Representative Pettengill waived aside by Chairman Rayburn in charge of administration bill.

•

Gasoline Allowable for April decreased 1,340,000 barrels to 34,520,000 barrels.

•

Unabated Activity in East Texas indicated by 82 locations and 87 completions during the week.

•

Ninety-eight Day Coking Run on a Dubbs unit at plant of Kendall Refining Company, Bradford, Pa., believed to have established new record for this type of operation.

•

East Texas Allowable recommended reduced by Engineer Gordon Griffin of Railroad Commission because of drop in pressure.

•

World's Deepest Test passes 11,700 feet, Gulf Co.'s No. 103 McElroy in western Upton County, Texas.

New Oil Law being considered by Texas legislature to clarify and codify existing statutes and extend market demand feature as permissive factor in regulation of overproduction.

•

Portable Drawworks, powered by internal combustion engine or electric motor, has been developed and is being tried in Eunice Field, New Mexico.

•

Oklahoma City Field Waste is analyzed as an example of what not to do in future oil fields of like character. Close well spacing and excessive gas-oil ratios lead to lack of profits to many operators although recovery of oil was high.

•

A Simple Equation has been developed to express the relationship between the gravity of an oil fraction and its distillation point. The calculated boiling point-gravity constant is high for naphthenic oils and low for paraffinic oils.

•

Tanker Regulations proposed before Interstate Commerce Committee protested by President Byles of American Petroleum Institute.

•

Natural Gas Probe by the Senate asked by Senator Couzens of Michigan who thinks Detroit suffers discrimination.

•

Oil Exchange Operations in gasoline futures reflect uncertainty of Eastern market situation. Crude oil market inactive.

•

A Fourth Grade Motor Fuel designed principally for use in trucks and busses, having an octane value of about 65 and less volatile than the average passenger car fuel may be instituted at a large number of middle western filling stations in the near future.

•

Crude Allowable for April increased 7,000 barrels daily to 2,527,300 barrels. Minor changes made to meet working conditions.

•

Panhandle Gas Pipe Line project taken before Administrator Ickes by representatives of Texas and St. Louis.

Cupboard Getting Bare

—Drawn exclusively for The Oil and Gas Journal

—Photo by John C. Day.

N. R. A. to Be Revised; Offer Amendment to Holding Company Bill

By HUGH D. MALLON
Washington Bureau, The Oil and Gas Journal

WASHINGTON, D. C., Mar. 18.—With the legislative jam in Congress apparently broken when the administration forced its way through on the Public Works Bill the road is open for quicker action on legislation than was thought possible a week ago. This should expedite action on the extension of the National Recovery Act, as well as other matters affecting the oil industry, such as the holding company bill.

The administration forces have had their prestige restored by the victory in the prevailing wage dispute in the public works measure, and it is the concensus that if President Roosevelt could win in that battle he could command anything from Congress. For this reason there is not expected to be any doubt of extending the National Recovery Act in whatever manner the President desires.

Much opposition has arisen to the act as it stands and opinion generally is it will be revised to a great extent before it is re-enacted. Senator Van Nuys, Democrat, from Indiana, has proposed a substitute which would vest in the Federal Trade Commission authority to call an industry together to formulate a code of fair competition under which it would be legal for the industry to operate. Provision is made for injunction proceedings to enforce the provisions of any such code agreed to by a majority of the industry and approved by the commission.

Would Separate Labor

Codes of this type would give to industry the type of self-government they need, and which it is impossible for any industry to acquire under government dominated codes such as are at present in vogue, in the opinion of industrialists who have commented on the measure. It is their opinion that labor regulations and industrial rules should be handled separately. They say there is no place on the industrial governing body for labor, although it is admitted universally that labor should be taken care of. The recommendation has been made that labor should be cared for by separate legislation to lessen the conflict between labor and industry in strictly industrial questions.

Senator Wagner, of New York, and other senators are apparently of the same opinion as numerous measures designed to help labor are being steered through legislative channels. Bills making mandatory a 30-hour week in all industry have been introduced in both houses, but such measures are frowned upon by the White House, and it is not expected they will be favorably acted upon, although they have the backing of the American Federation of Labor.

Senator Wagner has introduced a labor disputes bill which, it is claimed, would, is passed by Congress, replace Section 7(A) of the Recovery Act. It would outlaw company unions and give to organized labor the biggest stick any organization ever possessed. The administration has not made any public statement on this measure, but if it has the backing of the President the backing is only half-hearted, which will practically assure its defeat if it comes to a vote.

During the course of the hearing being conducted by the Senate Finance Committee, and which is supposed to be an investigation of the effect of the administration of the Recovery Act, it has been stated that the application of the code provisions in many industries has tended to foster monopoly.

Recasting the N.R.A.

S. Clay Williams, retiring chairman of the Natiinal Industrial Recovery Board, stated to the committee that was the penalty for any code for any industry. If attempts were made to rid the industry of unfair trade practices the uneconomic and inefficient units in the industry would be forced out of business. For this reason, Mr. Williams suggested that the act, if extended, be limited to interstate business, and that a specific definition of interstate commerce be included in the act. He also recommended that specific mention of the extent and the manner in which the antitrust laws are relaxed be inserted.

This view is also held by Donald Richberg, who spent several days being quizzed by committee members. Mr. Richberg went further than Mr. Williams by suggesting that approximately 537 codes, covering small industries, some of which were almost entirely intrastate in character should be junked and the various industries grouped under a few basic codes. Mr. Richberg has been interpreted as saying these codes should be annulled and nothing put forward to take their place, but in a formal statement issued he said this was not his intention, but that basic codes should replace those thrown away.

Pettengill Would Amend Holding Company Bill

The hearing on the holding company bill, now going on before the House Committee on Interstate and Foreign Commerce, is commanding great attention. A possible break in the solid wall of opposition to the wishes of the utility companies was seen during the week when Representative Pettengill, Democrat, of Indiana, put forward for discussion a modified form of regulation much less drastic than the bill under consideration.

Mr. Pettengill, reiterating the plan was entirely his own and merely proposed for discussion, proposed a series of regulations which would leave but one holding company with control over an operating utility company, other pyramided holding companies being converted into what would amount to an investment trust with only the authority to collect dividends, if any, on the stock held by such companies.

The plan outlined would:

Prevent a holding company from voting its own stock owned by another holding company.

Prohibit the voting of a holding company's stock by any individual owner thereof who is an officer or employe, and voting stock owner, in another holding company. Such individual would not be allowed to act as proxy. In this manner, Mr. Pettengill states, pyramiding of corporate control would be prevented as well as absentee management. Its effect, he said, would be to convert the third or fourth holding company into an investment trust.

Anyone connected with one holding company would not be permitted to affiliate with another company voting stock in his own company.

A holding company, or its representatives, would not be permitted to receive benefits from a firm that supplies materials, energy, or services to an operating company or other holding company in which the first holding company holds stock or receives a portion of the corporate earnings.

Records of all holding companies must be available for inspection by state commissions and the federal regulatory agency.

A majority of holding company directors would be required to live nine months of the year in the states, cities or towns served by the operating companies it owns.

Require a majority of the directors and all officers and general managers of operating companies controlled by holding companies likewise to be bona fide residents and utility users in the territory served.

Holding companies would be required to supply all services and supplies to operating companies at actual cost, and further, at not more than the open market price.

This provision, Mr. Pettengill explained, would prevent the practice now being used by some holding companies of charging exorbitant fees for management fees, engineering fees and charges for materials.

Under this plan, Mr. Pettengill stated it was his opinion the superstructure holding companies would gradually simplify themselves, at such time and under such circumstances and regulations as will work to the best advantage of their security owners. Mr. Pettengill believes this method of eliminating some of the evils of holding companies would be even more efficacious than the provisions of the pending Wheeler-Rayburn bill, while at the same time accomplishing the objectives set forth in the President's message. Furthermore, he said, it will not force the abolition of the holding companies or the statutory liquidation of their securities.

Rayburn Unmoved

Representative Sam Rayburn, chairman of the committee and author of the bill, was unmoved by the proposal of Mr. Pettengill. He said, "I have never been more certain that the supposed eagerness of the holding companies to accept regulation is largely lip service and that there is no realistic and far-sighted way to handle the relation of these private empires to the people except by their ultimate elimination."

Hearings on the holding company bill, which have been in progress for over two weeks, are expected to continue for at least six more weeks, but to forestall the enactment of the present bill seems to be almost an impossibility. The propaganda which has been flooding the mail of practically every congressman and senator in the Capitol has only served to arouse the members of Congress to support of the measure.

EQUIPMENT CODE BUDGET

WASHINGTON, D. C., Mar. 18.—The National Industrial Recovery Board has announced that the code authority for the American Petroleum Equipment Industry and Trade has made application for approval of its $68,095.23 budget, and the basis of assessment, for the period from January 1, 1935, to December 31, 1935. The basis of contribution is as follows: One-tenth of 1 per cent of gross sales per month, with a minimum of $2 per month and a maximum of $1,000 per month.

Electric Power Used to Produce Oil From Well 10,050 Feet Deep

Denver Producing & Refining Co.'s No. 1 Sah Cam C SE SE Section 33-10n-10w location in Caddo County, Okla. Rigging up

By L. G. E. BIGNELL
Petroleum Engineering Editor

BINGER, Okla., Mar. 18.—With the deepest producing well in the world about 6 miles east of this town in Caddo County, western Oklahoma, making about 50 bbls. of high grade oil per day from a total depth of 10,050 feet, and drilling about to start upon a second well with this same pay zone as its objective, there is much interest in the oil business here. The people of this farming and cattle country are now hoping that an oil field will be opened by this second well so that they may enjoy the profits accruing to owners of land under which oil and gas is found.

The Denver Producing & Refining Co., Oklahoma City, has completed its No. 1 A-dah-noe in the C NW SW SW Section 34-10n-10w, by plugging back from a total depth of 11,230 feet to 10,100 feet and running 10,040 feet of 2½-inch upset tubing inside of 9,920 feet of 6⅝-inch 26.60-pound casing. The lower 100 feet of this string of casing was ripped and the well is being produced by the use of gas lifts.

Two electric driven compressors have recently been installed at this well and gas from the well is used to build up sufficient pressure to start flow. The oil and gas is delivered into a large, high pressure oil and gas separator and the gas recycled. On March 14 this well produced 180 bbls. of high grade oil. Analysis of this oil is 14.24 per cent gasoline on the first cut, 7.36 per cent on the second cut and 7.20 per cent on the third cut or 28.80 per cent total. In addition this oil will yield 14.40 per cent Stoddard's solvent, a material used for various purposes by the paint and varnish industry and worth about 20 cents a gallon. Kerosene content, 9.68 per cent; gas oil 36.40 per cent, and fuel oil 5.34 per cent. If the Stoddard solvent cut is cracked into gasoline the total gasoline equals 43.20 per cent of the oil or about 17.3 gallons per barrel of crude.

Having no pipe line connections to this well the oil is being stored and about 3,500 bbls. are now on hand at the lease. As soon as the average daily capacity of the well is established it is probable that a pipe line will be laid from the lease to the Rock Island Railroad near Binger, a distance of about 6 miles nearly due west of the well.

Second Location

The Denver Producing & Refining Co. has erected in the C SE SE Section 33-10n-10w, being the middle of the 40 acres directly west of the location of No. 1 A-dah-noe well, a 156-foot steel derrick on concrete foundations that will probably be rigged up this week and drilling started within 10 days. It is planned to drill this hole as deep as necessary to secure a commercial well and as several good shows were secured above the present producing depth of the No. 1 A-dah-noe well it is hoped that one or more of them will prove productive in the new test known as No. 1 Sah Cam.

The well is to be drilled with electric power. The surface string will be 15½-inch diameter and about 150 feet long cemented in the bottom of an 18-foot deep circular cellar. There is a concrete monolith under the entire derrick foundations and the derrick floor is raised about 5 feet above the top of this concrete block.

Out of the bottom of the 150 feet of 15½-inch it is planned to drill an 11-inch hole to a depth of about 7,500 feet and set a string of 9⅝-inch casing. This depth may vary from 500 to 1,000 feet depending upon the position of producing formations that may be found in Oolitic limestone that contained evidence of oil and gas at about 7,300-foot depth in No. 1 A-dah-noe and this formation will be tested in No. 1 Sah Cam well.

If commercial production is not found at between 7,500 and 8,500 feet the hole will be carried to at least 10,000 feet and will be large enough diameter to permit 6⅝-inch casing to be set and cemented.

Decision to drill this second well with electric power was made because of the fact that the water found in the vicinity of the test is not desirable for boiler feed purposes and fuel oil or gas would have to be piped to the location. As the No. 1 A-dah-noe well is being produced by gas lift with the compressors driven by electric power a service line has been strung from a point near Binger and the power is furnished by the Southwestern Light & Power Co.

This current is generated in plants at Quanah, Texas, Lawton and Chickasha, Okla., and the 13,200-volt line at Binger is tapped and the current reduced to 2,300 volts for delivery to the A.C. motor-driven set at the well. The 2,300-volt current is further stepped down for use in camp and derrick lighting and will be available in 440, 220 and 110-volt circuits around the two wells and the camp.

Electric System

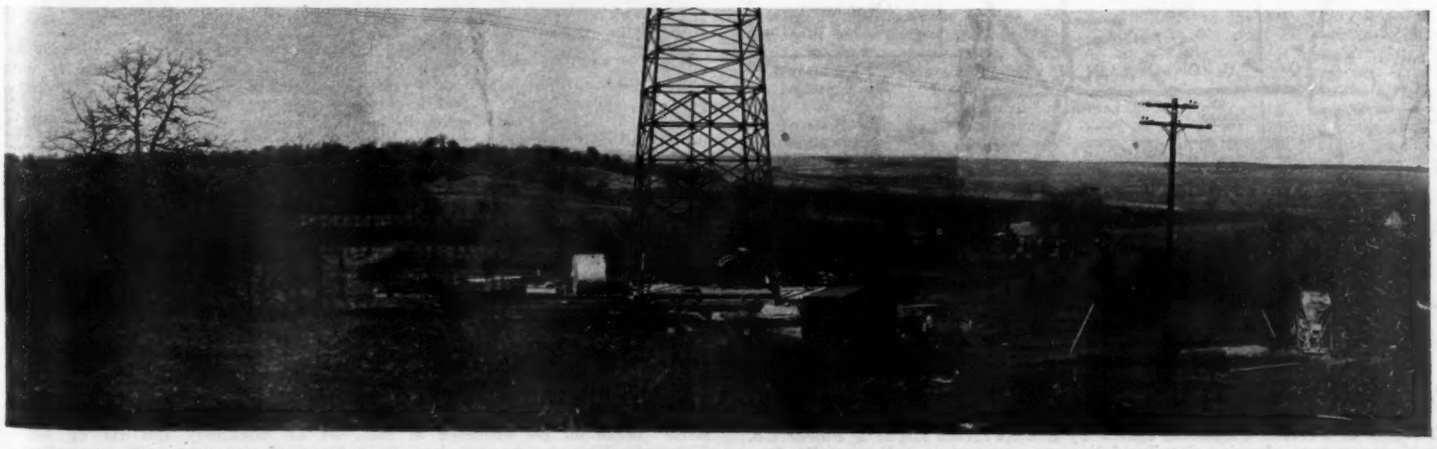
In selecting electric power to drill this semiwildcat well the Denver Producing & Refining Co. officials believe that they will be able to complete this test in much shorter time than No. 1 A-dah-noe, as they hope to eliminate shutdowns caused by lack of power. With bad water and fuel oil being hauled in there were times when it was impossible to fire the boilers, and in checking back over the log of the drilling operations on No. 1 A-dah-noe well it was found that the total down time was an appreciable item.

On the No. 1 Sah Cam well sampling will be done at frequent intervals and the samples will be examined by competent geologists stationed at the well at all times. It is not planned to core the hole, but before either the 9⅝-inch or 6⅝-inch casing is set the hole will be electrically cored and this record checked against the log prepared by the geologists at the well.

With this double saving in shut-down time it is hoped to set the 9⅝-inch pipe about 14 days after drilling starts if the electric core can be taken promptly and its comparison with the driller's log indicates that no important producing formations have been passed up above the 8,000-foot horizon.

The electric unit that will generate the direct current to be used in the motors driving the drawworks and pumps is somewhat of an innovation in the oil fields and has been developed by D. M. McCargar, district manager for Allis-Chalmers Manufacturing Co., Tulsa, and the company engineers.

The set consists of one 500-horsepower, three-phase, 60-cycle, 2,300-volt alternat-



General view of Denver Producing & Refining Co.'s No. 1 Sah Cam location C SE SE Section 33-10n-10w, Caddo County, Okla. with equipment on ground ready for digging up. Test is west offset of No. 1 A-dah-noe, deepest producing well in the world—10,050 feet

ing current motor connected by means of flexible couplings to two direct current generators all on one subbase and in a direct line. One direct current generator will develop 150 K.W. and the other 240 K.W., and they are so arranged that they can be used independently or together. For hoisting drill pipe there will be the total 390 K.W. current available for the drawworks 400-horsepower D.C. motor serving that unit. Slush pump motor is rated at 275 horsepower and the pumps can be run individually or together as needed.

The motor-generator set is about 20 feet overall length and will be mounted upon a concrete foundation located about 150 feet south of the derrick with the conduits carrying the power wires laid above the surface of the ground in a wooden box. This makes the power lines accessible at all times and the current is distributed to the drawworks and pump direct-current motors through a wiring system in the derrick.

The induction type direct-current motors are differentially wound and cannot be overloaded, nor can there be excessive demand on the alternating-current motor driving the direct-current generators. The two generators are side by side and they can be cut in and out of the electric system by a series of controls on the derrick floor and handled by the driller. If the drill pipe is rotating and only 150 horsepower is needed the larger generator will not be required to furnish current during that period of operation but can be cut in when it is necessary to hoist the pipe.

Back of the drawworks there is located a master drum with two control wheels with interlocking mechanism. This system permits the driller to change from the full 400 horsepower to 150 horsepower quickly and once the change is made the system is automatically locked in that position and cannot be changed until the operator decides the change is necessary.

A failure of line current is hardly probable, because of the power available at the several generating stations on the Southwestern Light & Power Co.'s system and the auxiliary power that can be quickly obtained by cutting into the Oklahoma Gas & Electric Co.'s system at Chickasha, still the failure of power might occur.

If such failure should occur while the drill stem was in the hole and the slush pumps shut down it is probable that the pipe would be stuck. To guard against such a contingency an auxiliary gasoline driven engine will be set directly back of the drawworks and furnish power by "V" belt drive. This engine is rated at 120 horsepower and this will be sufficient to pull the pipe out of the hole of the casing being run into the hole.

A W.K.M. catline winch is provided on the drawworks, and this entire unit will weigh about 32,000 pounds. It is fully enclosed in steel housing and mounted upon heavy skids and removed as one piece.

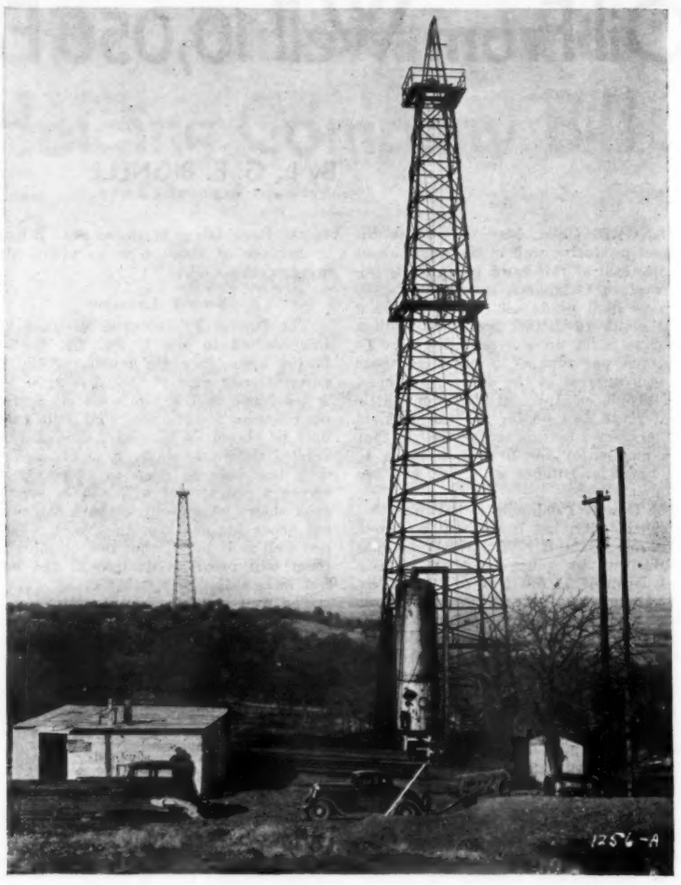
The latest type Lucey A-14,000 C S. K. F. bearing rotary turn table is supplied. This is chain driven with speed of 115 r.p.m. when engine or motor speed is 400 r.p.m. This turntable weighs about 12,000 pounds.

Two type HP-15,000 Lucey 7¾x18-inch fully enclosed Timken bearing motor driven slush pumps will be installed. They will be powered with one 275-horsepower direct current enclosed type pipe ventilated Allis-Chalmers direct current motor. Pumps, without motor, will weigh about 25,000 pounds each.

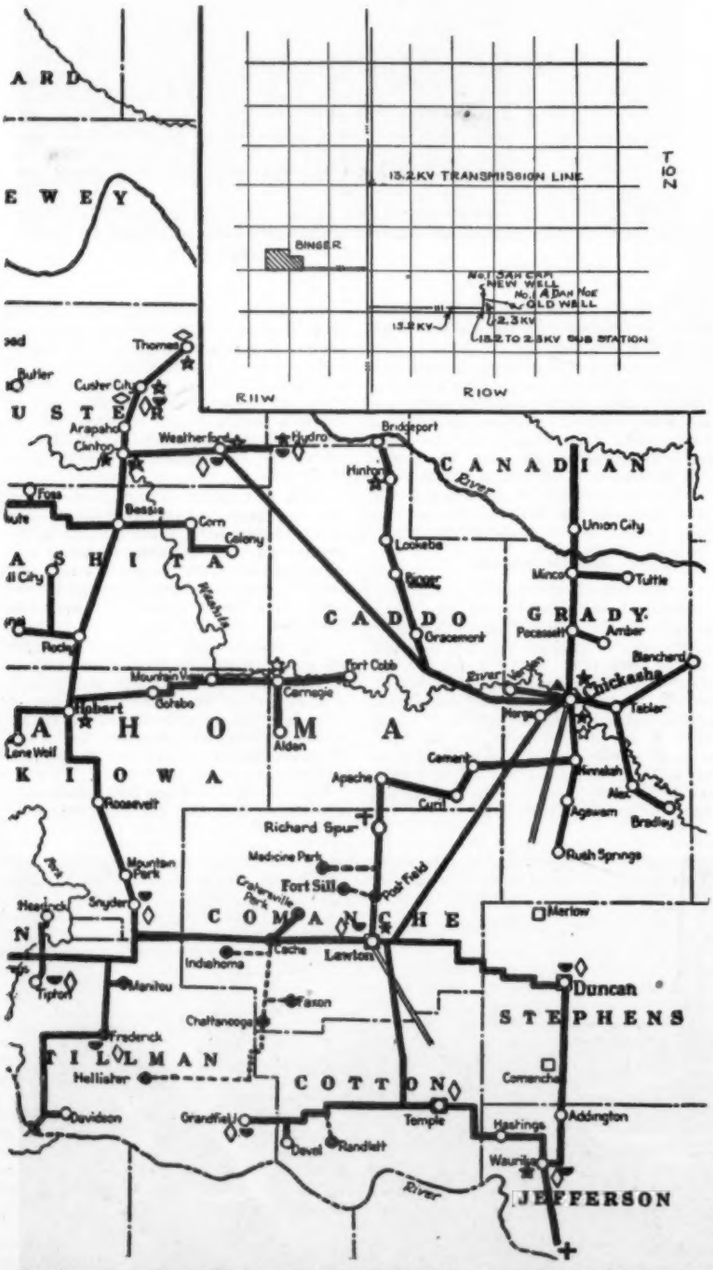
Regan six-sheave crown block is installed in the derrick with heavy duty traveling block. The 156-foot Slater steel derrick was moved from Oklahoma City and re-erected without reinforcing legs. It is of the heavy duty type.

At the site of the No. 1 A-dah-noe well it was difficult to find suitable space for digging as many slush pits and pits for shale and other material as desired but this is not the case at No. 1 Sah Cam. Large pits for mud returns and for new mud have been dug at the new location with a large reserve mud pit and another large pit for the accumulation of shales and cuttings as they are settled in the regular pits.

All of the equipment was on the ground the first of this week but the special motor-generator set which was en route and it is hoped to be able to set all machinery and rig up before March 23 and start drilling immediately thereafter.



Denver Producing & Refining Co.'s No. 1 A-dah-noe in section 34-10-10w, Caddo County, Okla. in foreground with derrick on location for second deep test to be known as Denver Producing & Refining Co.'s No. 1 Sah Cam, C SE SE Section 33-10-10w in background. No. 1 A-dah-noe is producing by gas lift and making about 50 barrels per day of high grade oil. Rigging up on No. 1 Sah Cam derrick



Portion of western Oklahoma served by Southwestern Light & Power Co. with insert map showing details of lines to properties of Denver Producing & Refining Co. in Caddo County, east of Binger, Okla.

Drawworks and Pumps

In selecting equipment for the purpose of drilling a hole 10,000 feet or deeper the Denver Producing & Refining Co. officials gave much consideration to details and installing a Lucey Products Corp. B-3,700 unitized drawworks with a 9-inch diameter drumshaft and extra large drum it is believed that the hole will be drilled without any lost time due to failure of any part of the drawworks.

This drawworks has perhaps the largest drum ever built for a machine of this kind. The drum is 42 inches between flanges and 26 inches in diameter and will hold 3,600 feet of 1⅛-inch wire rope. In addition to the regular brakes the drawworks are equipped with a Parkersburg Rig & Reel Co. "Hydromatic" brake on the extension of the drumshaft. This insures complete control of the long string of drill pipe or from the deepest contemplated depth although the job could not be done at regular speed of the standard motor unit.

The motor generator set is furnished with flexible couplings and provided with oil bearings of the dump proof type so that in moving from one location to another it is not possible to misalign ring oilers or spill oil or grease out of the bearings. Grease cups are used and as all bearings are of the antifriction and roller type it is anticipated that they will require little attention.

Split Ring Connectors Used in Construction of Wood Substructures

By NEIL WILLIAMS
Gulf Coast Bureau, The Oil and Gas Journal

HOUSTON, Tex., Mar. 18.—An innovation in design and construction of derrick substructure and engine foundation is being tried out in a deep test being started by Texas Co. at Bryan Mound, near Freeport, in the extreme southern part of Brazoria County. The principle of construction, which embodies the use of split ring connectors with a view to developing the maximum strength and shear resistance in wood, is not new but this is the first time it has been applied to this type structure.

The structure is of particular interest because of the height of 16 feet to which it was erected without the use of auxiliary foundations, and because, located in a low, boggy spot, it is supported only by a matting of timbers. Ordinarily, a special foundation would have been built up to a desired elevation for support of a conventional 86-inch steel or wood substructure, or else a cribbing type base would have been required on the matting.

The Texas Co. has made very thorough preparations and has taken all precautions and provided all facilities possible to insure the successful drilling of this test to as deep as 8,500 feet or lower. The test is a wildcat on the northwest flank of the Bryan Mound Dome, one of the oldest known domes on the coast, but one on which so far no oil production has been found. Sulphur has been mined for years from the cap rock on top the dome and a myriad of shallow wells has been drilled for this purpose but today there has been very little exploration of possible flanking sands. Thus, the test is of especial interest not only from an engineering standpoint but also because of development potentialities.

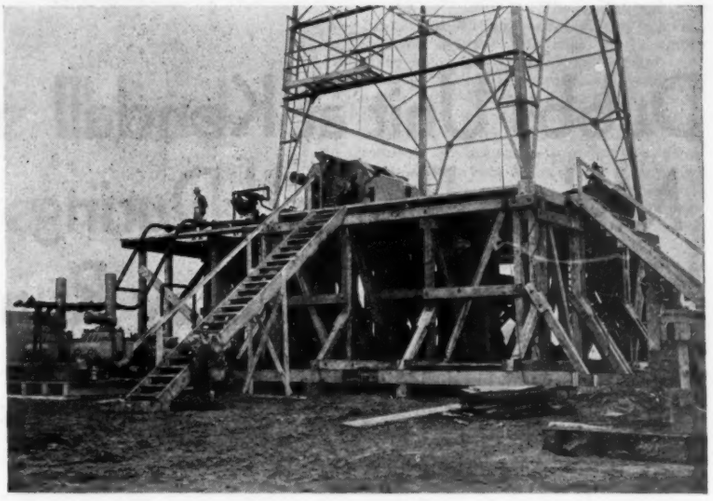
Bryan Mound is just a couple of miles inland from the coast line and the place where the test, known as No. 1 Freeport Sulphur Co., is located in the Brazos River bottoms, where the river empties into the Gulf of Mexico, and is subject not only to the overflow from that river, but being only 6 feet above mean low tide is subject to tidal encroachment. From this angle, the providing of adequate foundations for the derrick and drilling equipment was a matter of vital importance.

Substructure

The combined substructure and foundation is of wood fabrication using a grade of lumber known as short leaf dense structural timber, treated with Wolman salts. Striking is the lightness of the lumber in respect to the heavy timbers required in conventional wood construction to support such weights imposed. Leg members and braces are all of 8"x8" timbers using only 6"x12" timbers for trusses. A total of only 14,792 feet of timber was necessary and there are only 298 separate members.

Elevation of the derrick floor to 16 feet above the cellar was required to accommodate pressure drilling equipment, large hydraulic rotary being used. However, some extra elevation would have been needed anyway as protection against possible high tides and river overflows flooding the location. The hydraulic unit in this case is being used as a conventional rotary for the time being.

The substructure and engine foundation were designed to carry a load of 750,000 pounds at the derrick corners and 300,000 pounds at the rotary corners. For proper ground bearing the structure rests on a mat 40'x40' square, constructed of 3"x12" planks laid flat with 4-inch space between them, and on which sixteen 12"x12" sills were laid cross-wise. The base trusses of the structure rest directly on the sills. The substructure itself is 28 feet square at the top to accommodate the 26-foot base, 644,000-pound capacity, 136-foot A.P.I. Silicon steel derrick. The base of the substructure was carried out to 36 feet square.



Close-up of 16-foot structural timber derrick foundation provided by The Texas Co. for its deep wildcat test at Bryan Mound, near Freeport, in southern Brazoria County. At the ladder is Ed Terrell, gang pusher for Campbell & Locke, rig builders for the Connector Construction Co., which designed and fabricated the structure. Picture taken while test was being rigged up and just before rotary was placed

In the design of the substructure there is a system of inner connected trusses, there being four trusses in each series with the two series running at a 90-degree angle to each other. The alleys through the center are 8 feet 6 inches in one direction and 10 feet 6 inches in the other. Each truss was designed with three panels, the center panel being left free of bracing to clear alley way. The end panels of each truss carry diagonal bracing. This bracing accomplishes two purposes: First, to produce force triangles resulting in proper truss design, and second, to act at times as tension members and at times as compression members in carrying loads from one point of the structure to another.

At any point under the structure at which the ground will not take the load applied, the diagonal members either through compression or tension will transmit the excess load into other parts of the structure. This feature is intended to produce as nearly as possible uniform settling of the entire structure, which as constructed virtually is one integral unit. The top cords of the trusses are 28 feet long and the bottom cords 36 feet. To obtain this 36-foot length most economically two 18-foot lengths were spliced at the center. The column and diagonal members are 8"x8" throughout the structure while the top and bottom cords vary somewhat in accordance with the loads to be applied.

Design of Structure

In designing the structure making use of the split ring modern timber connectors it is feasible to lay out a stress load diagram as the connectors have a known loading capacity at each angle to the grain and the timbers used are the specified structural grade having a known fiber stress. In the grading of timber used the fiber stress is 1,800 pounds per square inch.

Due to vertical loading conditions at the corners of the derrick, the column or vertical members are located 4 feet from the end of the bottom cord and to obtain the maximum bearing on this additional 4 feet at the base of the structure, buttress braces were run from the column members to the ends of the bottom cord.

At the corners of the substructure directly under the derrick legs there are three column members which are 8"x8". These members by themselves at the height of the structure would have a ratio of slenderness that would not permit the full utilization of the compressive stress of the timber used. To overcome this condition, blocking was inserted through the column members containing connector rings and bolted through. The effect of this blocking is a built-up column similar to the conventional type of latticed column and, consequently, the ratio of slenderness is cut down to a point at which the full compressive strength of the timbers are utilized. The timbers in the column members have a safe compression loading capacity of 1,300 pounds per square inch and in this design each corner of the substructure is capable of carrying safely a load of 249,600 pounds.

The same conditions apply to the column members at the four corners supporting the rotary. The load-bearing members of the rotary consist of six 6x12 timbers, three for each truss. These members tie at the ends to the corner columns of the rotary which are comprised of four 8"x8" timbers and eight pairs of 4-inch connector rings are used at each corner. This gives the safe load bearing capacity at each corner of the rotary of 73,600 pounds. Heavy steel bearing plates are fastened to the 6"x12" timbers with J-bolts and two 81.4-pound special 20-inch I-beams carry the rotary and transmit the load to the 6"x12" members of the rotary trusses.

Engine Foundation

The engine foundation is similar in design and height to that of the substructure. It consists of three 16-foot trusses of three panels each with four trusses cross framed to the column members.

The structure was designed to the Texas Co.'s size specifications by D. L. Alexander and H. E. Anderson, designing engineers for the Connector Construction Co., of Houston, and prefabricated by the latter company at the plant of the National Lumber & Creosoting Co., with which the Connector Construction Co. is associated. The timbers, which were supplied from various southern pine mills, were treated by the National Lumber & Creosoting Co. with Wolman salts, a product using Di-mitri phenol as a preservative agent and which is a preventative against both dry and wet decay and termites, and which renders the timber fire resistant.

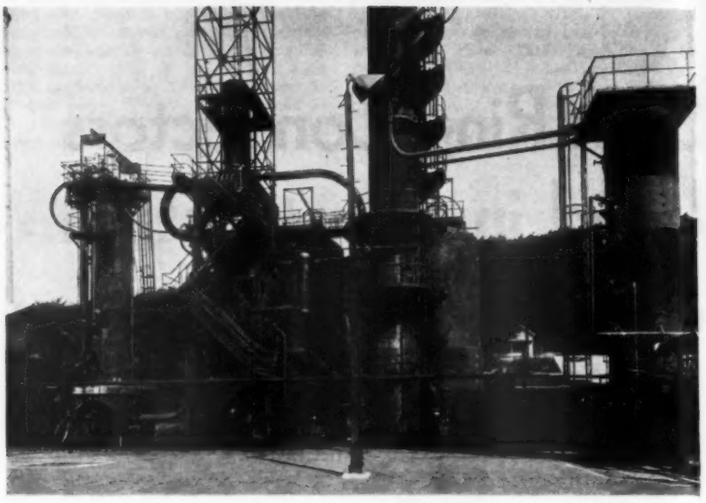
In the fabrication of these structures, each truss was laid out exactly as it would be in the structure and each part was marked for the truss designation and its particular place in the truss. Then the centers were laid off and the bolt holes drilled through all the members. The truss then was dismantled and the bolt holes used as guides for cutting the ring grooves. This assured that all members fit exactly when as-

(Continued on Page 20)

D. L. Alexander (left) and H. E. Anderson, designing engineers for the Connector Construction Co., which fabricated the structure

Dubbs Unit at Kendall Makes Record During Ninety-eight Day Run

By F. J. HEALY[1], C. H. ALBERDING[2] and B. J. FLOCK



Dubbs unit at Bradford, Pa. plant of the Kendall Refining Co.'s plant which ran 98 days on coking operations to establish what is believed to be a new record

A Dubbs cracking unit of the Kendall Refining Co., Bradford, Pa., was recently shut down after a non-stop run of 98 days, which breaks all previous records for continuous operation.

The products made during the record run were antiknock, long-mileage gasoline, and coke—a very high quality coke, different from that usually produced in non-residuum cracking operations.

This coke is very hard. It averaged only about 8 per cent volatile matter and is suitable for the manufacture of carbon electrodes. The output is being purchased at a premium price by manufacturers of such products.

The high quality of the coke is due to a different operating method than that commonly used in non-residuum operation. The equipment added to the unit to handle the coking operation is simple, consisting of two disused treating towers. The two chambers were connected for alternate operation, which made the record run possible.

Changes Not Difficult

This type of operation produces the maximum yield of gasoline from any charging stock. The Kendall equipment is so designed that the operation can be changed from any specification residuum to coke and back again, without difficulty, to meet changing demands of the market.

The unit on which this run was made is a Dubbs two-coil selective cracking unit to which the above mentioned continuous coking equipment has been added. This unit has two furnaces in which the light and heavy fractions of the charging stock and recycle stock are processed separately.

The heavy oil charge is fed into the fractionating column. A hot oil pump takes a heavy oil fraction from the base of the column and discharges it into a heating coil.

A light oil fraction is removed by another pump from the side of the column and is pumped to the light oil furnace, together with a small amount of water white distillate. The materials from both heating coils discharge into the reaction chamber.

The products from the reaction chamber pass to a flash chamber which is maintained under reduced pressure. The vapors from the flash chamber pass through a heat exchanger on the way to the fractionating column, while the residue is discharged into the coking chamber. Light recycle stock and the water white distillate are heated in this exchanger before entering the light oil furnace.

Gasoline vapors and gas are removed from the top of the fractionating column. The vapors from the top of the column pass to a parallel coil condenser and to a distillate receiver where the gas is separated. Pressure on the separating and fractionating system is maintained by the release of gas from the distillate receiver.

The distillate from the receiver is then pumped to a stabilizer and the gas goes to an absorption system. The two towers in which the coking is done were formerly used to treat gasoline, but after the development of Universal inhibitor this treating was abandoned and the towers lay idle until revamped for the new use.

The cracked residuum is pumped from the flash chamber to the coke chamber. The vapors from the coke chamber pass to a tower and thence to a condenser, where they are condensed and returned to the cracking zone. A coke chamber is filled in about four days. The empty chamber is then switched into the system and the full chamber is switched out.

Then the full chamber is steamed and cooled with water and the coke is removed in sizable lumps.

Tube in Three Years

The shutdown of the record run was caused by a leak in a tube which had been in service in the heavy oil furnace for three years. The leak was at the tube roll. Had it not been for this mechanical difficulty the run could have continued, as the condition of the unit was excellent. No significant amount of coke was found anywhere in the unit during the shutdown.

SUMMARY OF THE DATA FOR RECORD RUN

	Bbls.	% of raw oil	Bbls. per day
Light charge	23,956	...	244
Heavy charge	109,690	...	1,115
Total charge	133,646	...	1,359
Gasoline produced	99,932	74.8	1,016
Residuum	346	0.3	4
Coke	11,044	8.2	112
Gas and loss	22,324	16.7	227

Gas production—114,885,900 cu. ft.
Cu. ft. per bbl. charge—859.
Coke per bbl. charge—30 lbs.

Analyses of Charge and Products

	Heavy feed	Light feed	Finished stab. gaso.
Gravity	38.6	46.2	61.0
I.B.P.	370	338	83
10%	519	394	110
50%	590	423	247
90%	690	466	379
E.P.	734	510	411
% Rec.	97	98	97
% @ 400° F.	6.5	16	Color 15
% @ 572° F.	37.0		Gum 3 mgs.
Carbon res.	0.058		Vap. pres.—10.6
Pour	40		
B.S.&W.	Trace		

The results demonstrate the success of this operation. It is possible to produce fuel oil at any time there is a demand for it or to produce a high quality salable coke whenever it is more profitable to do so.

The run now in progress indicates that the results of the record run may be bettered. In this run, after 40 days of operation, the average gasoline yield was 79 per cent, or 4 per cent higher than in the record run. In addition, a 200-bbl. per day increase in throughput has been effected, accompanied by a marked decrease in fuel consumption. These improved results are due to small changes made in the equipment after the 98-day run.

During 23 hours of the run, the unit was producing residuum. The remainder of the time it was on coking operation. During the run 1,949 tons of coke were produced. This coke was loaded directly into cars from the coke chambers by means of conveyors.

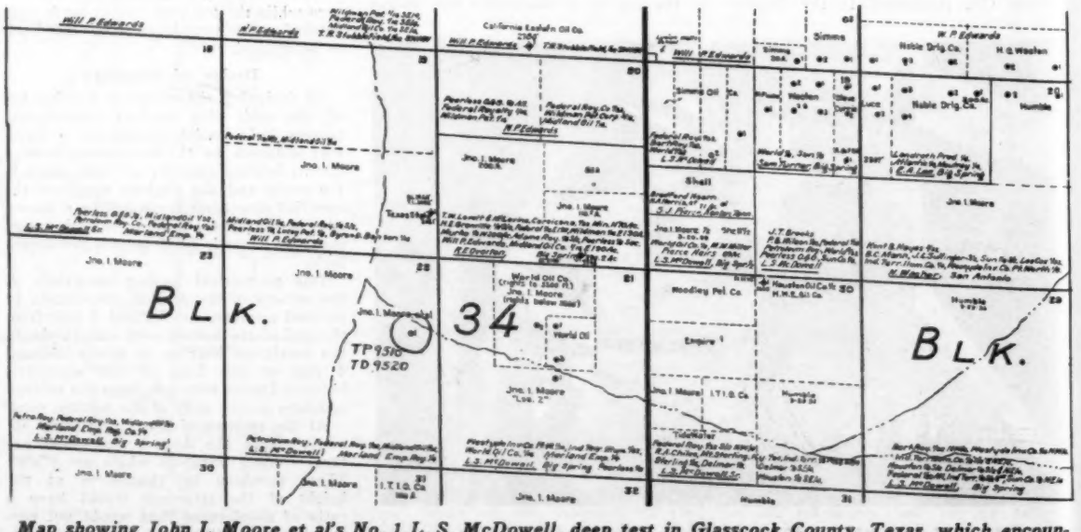
[1]Kendall Refining Co. [2]Universal Oil Products Co.

April Allocations for Crude Oil and Gasoline

WASHINGTON, D. C., Mar. 18.—A number of minor changes in state oil production allowables aggregating a total increase of 7,000 bbls. daily was authorized for April in an order by Administrator Ickes. Production for April was placed at 2,527,300 bbls. daily compared with 2,520,300 in March.

Arkansas, off 1,200 to 30,700; California, up 700 to 493,300; Colorado, up 200 to 3,700; Illinois, off 200 to 11,000; Indiana, up 100 to 2,300; Kansas, up 1,300 to 141,000; Kentucky, up 600 to 15,300; Louisiana, up 500 to 111,000; Michigan, up 1,100 to 32,700; Montana, up 200 to 9,700; New Mexico, up 400 to 49,700; New York, up 400 to 11,700; Ohio, down 200 to 11,300; Oklahoma, up 2,300 to 493,300; Pennsylvania, up 1,000 to 44,300; Texas, up 900 to 1,021,000; West Virginia, down 300 to 11,000 and Wyoming, down 800 to 34,300.

The national gasoline allowable for April was placed at 34,520,000 bbls. by Administrator Ickes, authorizing a decrease of 1,340,000 bbls. for the month from the 35,860,000 bbls. in March. The Bureau of Mines and the Petroleum Administrative Board advised the administrator that refinery gasoline inventories should be reduced 1,520,000 bbls. during April.



Map showing John I. Moore et al's No. 1 L. S. McDowell, deep test in Glasscock County, Texas, which encountered oil at 9,510 feet

Petroleum Administrative Board Analyzes Replies to Questionnaire

By HUGH D. MALLON
Washington Bureau, The Oil and Gas Journal

WASHINGTON, D. C., Mar. 20.—The Petroleum Administrative Board has analyzed and summarized, for the Cole Petroleum Subcommittee of the House Interstate and Foreign Commerce Committee, the results obtained from a questionnaire sent to the oil industry with reference to marketing facilities. This record has now been submitted to Representative Cole, chairman of the subcommittee and will be considered by his committee before the supplemental report on oil legislation is submitted by him.

A total of 105 companies reported in response to the questionnaire, including all integrated companies with the exception of two. In the report the companies have been classified as integrated and non-integrated, the former classification totaling 35, while the non-integrated group totals 56. Fourteen independent jobbers also responded.

From comparisons made the data covered in this report covers between 80 and 85 per cent of the industry. In order to establish the representative character of the data the number of refineries owned and operated by the reporting companies have been summarized and compared with the latest report of the Bureau of Mines, in the accompanying table.

	Refineries				Cracking plants	
			Capacity		Capacity	
	Operating	Closed down	Operating	Closed down	Operating	Closed down
Listed by Bureau of Mines as of Jan. 1, 1934	454	137	3,553,569	364,648	1,712,629	377,735
Companies reporting:						
Integrated	140	16	2,691,300	136,400	1,443,056	292,885
Per cent of total			75.73	37.41	84 26	77 54
Non-integrated	55	9	217,780	33,000	65,875	8,000
Per cent of total			6.13	9 04	3.85	2 12
Integrated and non-integrated combined	195	25	2,909,080	169,400	1,508,931	300,885
Per cent of total			81 86	46 45	88 11	79 66

The reporting companies therefore represent 81.86 per cent of the operating capacity. The reporting companies accounted for 88.11 per cent of the daily cracking capacity.

Production of Motor Fuels

The answers to the questionnaires showed that while the amount of gasoline produced from year to year varies considerably, the per cent of the total produced or marketed by integrated and non-integrated companies remains practically stationary. For the four and one-half year period (1930 to July 1, 1934) covered in the reports it was shown that 83.65 per cent of the total production of the country as reported by the Bureau of Mines was covered in the replies to the questionnaires. Of this amount of gasoline produced integrated companies accounted for 79.15 per cent and nonintegrated for 4.5 per cent. This amount varied from a low produced by integrated companies of 77.69 per cent in the first six months of 1934, to a high of 80.39 per cent during the year 1932.

During the same period nonintegrated companies showed a variance of from 3.68 per cent in 1930 to 5.34 per cent in the first six months of 1934. This increase in the production of motor fuel continued steadily upwards during the years covered, and today shows an increase of just a fraction under 2 per cent. The same is true of sales of motor fuel as is true of the production thereof. While the percentage of the production does not vary to any considerable extent, neither do the percentage of sales. It is also shown by the report that the sales of motor fuel by the non-integrated companies have advanced, in this case exactly two per cent, or a trifle more than the percentage gain in production.

The combined amount of motor fuel sales for the country covered in this report represents 97.65 per cent of the total sold. This figure is arrived at by the fact that the integrated companies represent 91.33 per cent and the non-integrated group accounts for 6.32 per cent.

Exports and Imports

A constant decline in both exports and imports since 1930 is indicated. The total exports of all companies declined from 1,879,000,000 gallons in 1930 to 702,000,000 gallons in 1933 or 62.6 per cent. Imports during the same period declined from 700,000,000 gallons to the negligible quantity of 4,000,000 gallons. It is significant to note that there were no imports reported for the first six months of 1934. This decline in our foreign trade has been partly due to the imposition on June 21, 1932 of an excise tax upon imports of crude petroleum and its refined products. After this date the majority of the companies engaged in importing and exporting motor fuels changed their marketing set-up whereby it was possible for them to supply their export demand direct from refineries located in foreign countries. Other factors also had an adverse bearing on our foreign trade, amongst them being (a) the decrease in consumption caused by the depression and (b) restrictions imposed by foreign countries.

Terminals and Bulk Plants

Sixty companies reported owning and operating terminals and bulk plants. This figure includes the integrated companies and 25 of the nonintegrated companies, a majority of the smaller companies not reporting on this subject.

The combined value of terminals and bulk plants on July 1, 1934, was approximately $348,000,000. The average value per plant was approximately $17,500. The value shown for the nonintegrated companies was slightly less than that for the large companies. Approximately 90 per cent of the plants have a capacity less than 100,000 gallons; 7 per cent, 100,000 to 500,000 gallons; and 3 per cent, 500,000 gallons or over.

The number of terminals and bulk plants increased from 17,972 in 1930 to 19,807 on July 1, 1934 or 1,835. The predominating increase was in the smaller plants. During the same period the number directly operated increased 612; those operated by agents 517; and the number closed down increased from 369 to 1,075, or 706.

The highest value of any group of terminals or bulk plants reported by any one company was $56,500,000 for 414, or an average of $136,474 per plant as of July 1, 1934. The highest average value of the plants operated by any one company was $373,600 on January 1, 1930. This figure covered six plants all of which were in excess of 500,000 gallons capacity and located along the Atlantic Coast. The lowest value of any group of plants reported by a single company covered 313 having a total value of $498,000, or $1,591 per plant. The largest number of plants owned by any one company was 4,878 as of January 1, 1933 with an average value of $10,378. Several of the nonintegrated companies reported owning a very small number, ranging anywhere from one to five.

Throughput Value

The average book value per 1,000 gallons of throughput for all companies was around $24. But slight variation in this figure is noted for either group of companies. The highest and lowest throughput for any group was reported by non-integrated companies. The lowest, 92,000 gallons, is shown for 1933 while the highest, 10,500,000 gallons, was reported for 1932. The throughput of the integrated companies varied from 136,000 gallons in 1933 to 8,800,000 gallons in 1930.

The highest number of plants in any one state is shown by Texas approximating 2,000 as of July 1, 1934. As quite a number of small companies who did not report operate in this state, it is reasonable to suppose the actual number is greatly in excess of this amount. Texas is closely followed by Kansas and California, each having in excess of 1,000. Iowa, on July 1, 1934, very closely approaches this figure with 992 reported. Only six states: New Hampshire, Vermont, Rhode Island, Delaware, Connecticut, and Nevada show less than 100. Rhode Island had a minimum of 32. New York shows the largest number of plants with a capacity of 500,000 gallons or over with 108 on July 1, 1934. Rhode Island shows the largest percentage of plants with a capacity of 500,000 gallons or over with 13, or over one-third of its total. Several states located in sparsely settled regions reported no large plants.

The largest number of plants in any one region was shown for the North Central, Middle West, and Northwest Central States where over 7,400 are located. The lowest number was shown for the Rocky Mountain States with 1,107. This region, however, covers only five states. On July 1, 1934, 2,326 were located in the New England and North Atlantic States which includes the populous states of New York, Pennsylvania, Massachusetts, and New Jersey.

Service Stations

The Bureau of Census in its figures for 1933 shows a total of 170,404 service stations. From the information supplied by reporting companies a total number of 219,382 are accounted for. This figure exceeds the Bureau's by approximately 50,000. The report of the Bureau of Census covered only service stations and does not take into account other sales outlets such as garages, accessory stores, merchandising establishments, etc. While information was requested of companies on service stations, undoubtedly they have furnished the number of accounts supplied by them on a 100 per cent basis. If so, they failed to exclude accounts other than service stations. This fact would account for the wide difference shown in the two figures.

Company owned and operated stations and those supplied on a 100 per cent basis show a considerable increase from January 1, 1930 to July 1, 1934. The number owned and operated by the integrated companies increased 40 per cent from 16,976 to 23,761, while the non-integrated companies increased their number in approximately the same proportion from 432 to 709.

The value of stations owned and operated by integrated companies rose from $275,753,147 on January 1, 1930 to $402,308,337 on January 1, 1933. Since then the value has declined to $374,000,000. The average value per station for the larger companies reached the maximum of $17,355 on January 1, 1932, and declined on July 1, 1934 to $15,740. The value of the stations owned and operated by the smaller companies is slightly in excess of one-third the value of those operated by the larger companies; on July 1, 1934 the value per station was $5,672.

Small Company Sales

The annual sales of motor fuel per station for the larger companies declined from 99,294 gallons in 1930 to 85,130 gallons in 1933. The average value of stations per 1,000 gallons of sales during the same period increased from $168 to $187. The sales of nonintegrated companies declined from 63,292 gallons per station in 1930 to 50,215 gallons in 1933 and the value per 1,000 gallons of sales rose from $111 to $126.

The smaller companies show that approximately 60 per cent of their stations sell less than 5,000 gallons per month. This ratio remained fairly even from year to year. For the integrated companies' stations, the number selling less than 5,000 gallons per month rose from 31.73 per cent on January 1, 1930 to 43.94 per cent on July 1, 1934. During the same period stations showing monthly sales in excess of 10,000 but less than 15,000 gallons declined from 17.72 per cent to 10.92 per cent. A marked decline is also noted in the number of stations where sales are in excess of 25,000 gallons or over per month, declining from 434 on January 1, 1930 to 134 on July 1, 1934.

The greatest amount invested by any one company in service stations which it was operating was $66,826,607 on January 1, 1934. This figure covered 4,525 stations or an average per station of $14,768. The largest increase reported by any company in the number of stations owned and operated for any one year was 728 in 1930. The next largest individual increase of 641 occurred during the same year.

On January 1, 1930 the value of service stations owned and operated by the large companies ranged from $4,937 to $38,220 and on July 1, 1934, the range was from $6,219 to $38,290. For the smaller companies the lowest value reported was $233 on January 1, 1933 and the highest value was shown by a company with five which on January 1, 1932, had a book value of $245,855 or an average of $49,171.

The annual sales per station for the larger companies during 1930 ranged from 15,000 gallons to 216,000 gallons, and the value per 1,000 gallons of motor fuel sold fluctuated from $77 to $513. Just as wide, during the other periods, were the variations in the sales and value per 1,000 gallons of sales. The investment in stations of the smaller companies for each 1,000 gallons sold ranged from $11 for a company owning six sta-

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Boiling Point-Gravity Constant Is Index of Lub Oil Characteristics

By ELLA ALFARETTA JACKSON
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Following in general the method used in deriving the "viscosity-gravity constant," a mathematical equation has been set up expressing the relationship between boiling points and gravities of various petroleum fractions. The equation is logarithmic and expresses the A.P.I. gravity in terms of the 50 per cent boiling point and a constant which is different for each crude and is characteristic of it. This "boiling point-gravity constant" is low for paraffinic crudes and high for naphthenic crudes. Its value is a direct index of a relative naphthenicity of the oil. This constant has an advantage over the "viscosity-gravity constant," which is limited to heavier fractions of the crude where the viscosities can be determined with accuracy, in that it may be applied throughout the entire range of the crude.

A nomographic chart has been worked out which affords ready solution of the equation.

The viscosity-gravity constant[1], as an index of the paraffinic or naphthenic character of lubricating oils, has proved to be a very useful tool for many purposes. It is strictly limited, however, to oils whose Saybolt viscosity can be accurately measured, and its use is not advised for viscosities below 50 seconds. A similar index is often desired for nonviscous fractions of oil, and, since the relation between boiling point and gravity appeared to form a basis for such an index the present work was undertaken to develop an index based on these two constants. Such an index should apply not only to nonviscous oils, but into the viscous range as well, so that its field of usefulness should be larger than that of the viscosity-gravity constant. The index so obtained has proved its usefulness in the laboratories of the Atlantic Refining Co. for a number of years and is now submitted with the thought that it may prove of value to others.

From data available in this laboratory, gravities of successive cuts of 17 different crude oils were plotted against the 50 per cent boiling points of the cuts.

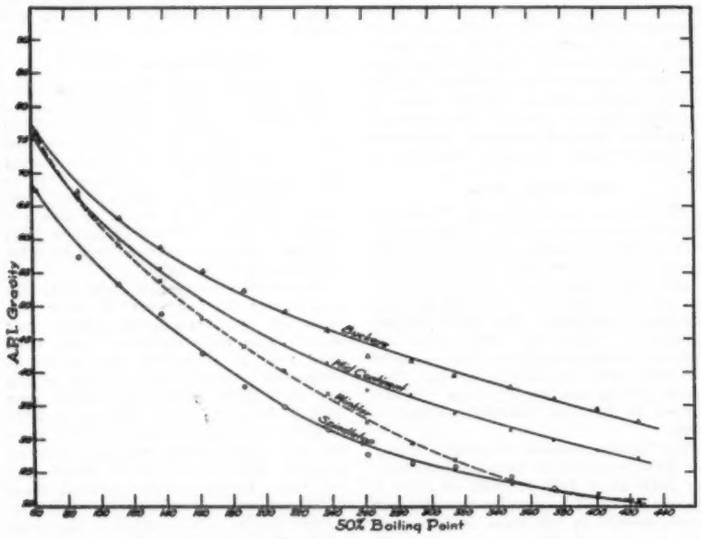

Fig. 1—Relation between 50% boiling point and A.P.I. gravity

[1]Hill and Coats, Ind. Eng. Chem. 20, 641 (1928).

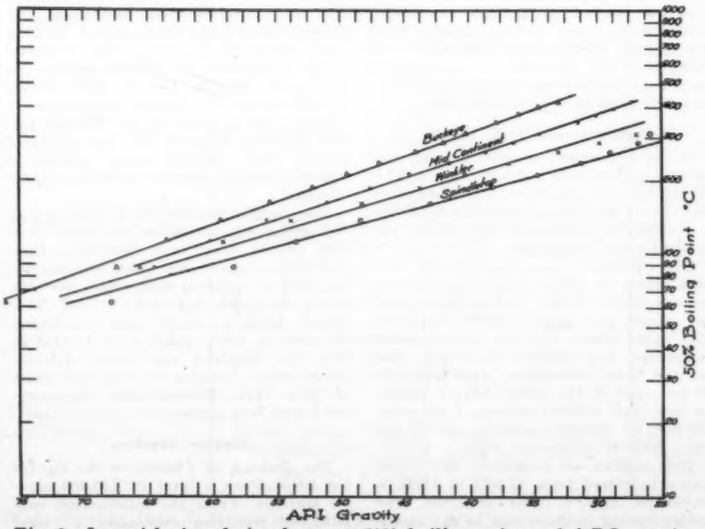

Fig. 2—Logarithmic relation between 50% boiling point and A.P.I. gravity

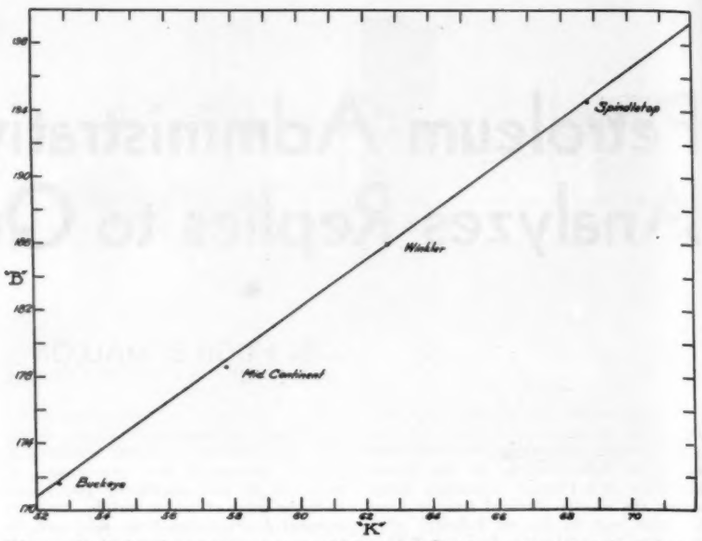

Fig. 3—Relation between constants "B" and "K" of equation G=B+K log T

Boiling points obtained at 10 mm. pressure were converted to atmospheric pressure values in accordance with the conversion chart of O. G. Wilson, Jr.[2] Since the plots all showed the same general form, there were picked from the 17 crudes for further work, four crudes representative of the extremes of the group and intermediate positions. (See Figure 1.) A.P.I. gravities of these crudes were then plotted against the 50 per cent boiling points in degrees Centigrade on semi-logarithmic paper. (See Figure 2.) Four converging straight lines (one for each crude) were thus obtained, showing that all the curves conform to the general equation

$$G = B + K \log T \qquad (1)$$

where G is the A.P.I. gravity; T, the 50 per cent boiling point in degrees Centigrade; and B and K are constants. (The slope of the line for Winkler crude may be questioned. As drawn it represents a crude of Winkler type having constant naphthenicity throughout. The variation of the points from this line indicates the variation in naphthenicity of the different fractions of Winkler crude.) The general method followed in determining values for B and K for each of the four crudes is that described by Lipka.[3] The values obtained are those given in Table 1. When these values were plotted, B against K, the four points fell in a straight line (Figure 3). The equation for this line was solved, and the value of K in terms of B was obtained. This value for K substituted in equation (1) gives the equation:

$$G = B + (68 - .703B) \log T \qquad (2)$$

where G is the A.P.I. gravity, T is the 50 per cent boiling point in degrees Centigrade, and B is a single constant characteristic of the crude and its source. This constant "B" is known as the boiling point-gravity constant. The values of this constant for different fractions of the four crudes under consideration are shown in Table 2. It will be observed that B is not strictly a constant. While the values for Buckeye and Mid-Continent crudes are practically constant throughout, those for Winkler and Spindletop show considerable variation. This is in line with the varying naphthenicity of these crudes and is not considered an argument against the accuracy of the equation. The boiling point-gravity constant varies no more, and possibly less, from the constant value than does the viscosity-gravity constant as is also shown by Table 2.

[2]O. G. Wilson, Jr., J. Ind. & Eng. Chem. 20, 1,364 (1928).

[3]Graphical and Mechanical Computation by Joseph Lipka, page 24.

Alignment Chart

Calculation of the boiling point-gravity constant from the equation

$$G = B + (68 - .703B) \log T$$

is tedious and time consuming. In order to eliminate this factor, an alignment chart (Figure 4) was constructed which permits rapid estimation of the constant from the boiling point and gravity data. The chart is similar to that developed by Houghton and Robb[4] for estimating the viscosity-gravity constant.

In using the chart, the 50 per cent boiling point is connected by a straight edge with the A.P.I. gravity, and the value for B, the boiling point-gravity constant, read directly from the intersection of this line with the central scale. For example, a Mid-Continent distillate has a 50 per cent boiling point of 215° C. and an A.P.I. gravity of 44.2°. The constant is found to be 179.

In Table 2 values for both viscosity-gravity constant and boiling point-gravity constant were given for the heavier fractions of the crudes. From the figures given a rough correspondence between the two constants may be obtained.

Conclusion

As explained above, the boiling point-gravity constant is an index of the chemical nature of the oil. As with the viscosity-gravity constant, the higher the value the more naphthenic the oil, and the low-

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[4]Houghton and Robb, Anal. Ed., Ind. & Eng. Chem. 3, 144 (1931).

Well Spacing and Rate of Production Important Ultimate Recovery Factors

By S. F. SHAW
Consulting Engineer

Data are gradually accumulating that will furnish a basis on which to determine whether or not the Oklahoma City Field has been produced in a wasteful manner. Discussion of these data at this time may point to useful lessons that can be learned before the interest in this field is lost in the discovery and exploitation of new fields.

The principal forms of waste that might be considered as taking place in the Oklahoma City Field include the following:

1. Economic waste due to excessive drilling.
2. Economic waste due to producing and marketing oil at a time when the supply was much greater than the demand.
3. Physical waste of oil on the surface.
4. Physical waste of gas accompanying the oil.
5. Waste of oil through inefficient production methods, resulting in reduced ultimate recovery.

Economic Waste Due to Excessive Drilling

There may have been economic waste in the Oklahoma City Field due to close spacing of wells, during a time when the price of oil ranged from 25 to 75 cents per barrel, but this premise might be open to discussion with oil at $1 per barrel, and certainly provides room for argument when the price of oil is $1.50 per barrel or higher.

Rough estimates of the cost of drilling a well in this field range from $155,000 in 1929 to $90,000 in 1934, and has averaged about $127,500 for the 1,128 wells already drilled, making for a total drilling cost of $143,800,000. Ultimate recovery is as yet in doubt, but guesses have ranged from 250,000,000 to 500,000,000 bbls., on which basis the cost would range between 57 and 29 cents per barrel for drilling and initially equipping a well for production. At the present time it appears to the writer that the ultimate recovery will not much exceed 300,000,000 bbls., if, indeed, it reaches that quantity, which would make for an average drilling cost of 48 cents per barrel.

When the field was first discovered by the Indian Territory Illuminating Oil Co., a serious effort was made by that company to secure agreements whereby drilling would be limited to one well for each 40 acres, and two wells were drilled by the I. T. I. O. Co. with that spacing. This spacing plan, however, was not carried throughout the field. In the Arbuckle and Simpson zones, the major part of the productive acreage was given a spacing of approximately one well to 10 acres. This spacing was probably too wide to extract the maximum ultimate recovery, but was probably better from an economic point of view.

When the Wilcox, which is the most prolific zone, was reached, owing partly to the fact that most of the wells were located in town lot areas, the spacing was closer, averaging about six acres per well in that area. The wider spacing in the southmost part of the Wilcox zone makes for an average of about seven and one-quarter acres per well in this zone.

TABLE 1—ESTIMATED ULTIMATE RECOVERY AND DRILLING COST IN THE OKLAHOMA CITY FIELD

Zone—	Acres	Number wells	Barrels ultimate recovery— Total	Per well	Per acre	Cost of drilling— Total	Per bbl.
Arbuckle	1,600	115	18,000,000	156,500	11,250	$140,000	$0.89
Simpson	4,400	455	82,000,000	180,000	18,600	128,000	0.71
Wilcox	4,000	550	200,000,000	363,600	50,000	125,000	0.34
Total	10,000	1,120	300,000,000	268,000	30,000	$127,500	$0.48

At the present time, it appears that the ultimate recovery, and the drilling cost per barrel, from these three zones, will be approximately as noted in Table 1.

There will be differences of opinion as to what the recovery would be with lower density in spacing, although it is believed that the majority would probably favor the opinion that recovery would be reduced with a smaller number of wells. Assuming that recovery would differ with different spacing, the relative costs per barrel for drilling in the Wilcox zone might tentatively be assumed as given in Table 2.

TABLE 2—COST OF DRILLING IN THE WILCOX ZONE WITH DIFFERENT SPACING

How spaced—	Barrel recovery per acre	Cost per bbl. for drilling
Present spacing	50,000	$0.34
10-acre spacing	40,000	0.31
40-acre spacing	20,000	0.16

So far as drilling is concerned, it appears that wider spacing would result in lower costs per barrel. It is doubtful, however, whether any spacing within reason would have permitted a profit to be made on wells in the Arbuckle zone with oil at $1 or less per barrel, because of the low recovery per acre. Even in the Wilcox zone the profit would be small at $1 per barrel, if the market conditions were such as to require that the oil be extracted at a greatly restricted rate.

In order to permit rough comparison to be made when producing oil in the Oklahoma City Field at different rates of production and at different prices, some tables have been prepared. For the purpose of these calculations, it is assumed that the recovery per acre would follow the estimated given in Table 2, whatever be the rate of production, although this would probably not be the actual results. Net oil recovered is based on deduction of one-eighth for royalty, and 3 per cent deduction for loss in transportation.

The costs in Table 3 are based on net oil at average production cost of about 57 cents per barrel, including overhead at 25 cents per barrel, and interest on the investment is assumed at 8 per cent. The comparison in Table 3 is intended to show the influence of slow withdrawal and high interest charge on the outcome, the production assumed as being extracted in 10 equal annual installments, and the price averaging $1 per barrel.

The outcome in Table 3 is better for wide spacing than for close spacing when the price of oil is $1 per barrel, and with interest at 8 per cent.

Another set of assumptions are made in which production and overhead costs are taken at 45 cents per barrel, and interest computed at 6 per cent on unpaid balances at the end of the year, with results as shown in Table 4.

The wide spacing in Table 4 indicates a much better outcome, than close spacing, when oil is priced at $1 per barrel, and with the oil being extracted in 10 equal annual installments.

An assumed comparison of production is shown in Table 5 based on the wells being produced at maximum capacity, thus lowering the operating costs and interest charges per barrel.

The outcome from production at maximum capacity with wells costing $125,000 for drilling, with addition of $2,000 per acre for leasehold, and with further addition of $25,000 per well for gas lift equipment, with interest at 6 per cent, and with costs as assumed, would be as shown in Table 6.

With the oil removed at slow rate, it appears from Table 4 that the outcome is better with spacing at 40 acres per well. But when the price of oil increases to $1.50 per barrel or higher, the outcome with spacing at 7¼ acres per well is much better than when the spacing is at 40 acres per well.

It would seem that the average well in the Oklahoma City Field, even in the prolific Wilcox zone, would not stand much chance of paying out with oil at $1 per barrel. There are wells, of course, in the Wilcox zone where the production is in excess of 50,000 bbls. per acre in which the outcome is much improved from that shown in the tables.

TABLE 3—OUTCOME OF WILCOX SAND OPERATIONS ON DIFFERENT BASIS OF SPACING

Acres per well—	Total assumed recovery, bbls. per well	Average production cost per bbl.	Cost per bbl. for interest at 8 per cent	Outcome at exhaustion— Per well	Per acre
7¼	363,600	$0.57	$0.29	*$97,000	*$13,300
40	800,000	0.58	0.11	*7,000	*170

*Indicates a loss.

TABLE 4—OUTCOME OF WILCOX SAND OPERATIONS WITH INTEREST AT 6 PER CENT AND PRODUCTION COSTS AVERAGING APPROXIMATELY 45 CENTS PER BARREL

Acres per well—	Total assumed recovery, bbls. per well	Average production cost per bbl.	Cost per bbl. for interest at 8 per cent	Outcome at exhaustion— Per well	Per acre
7¼	363,600	$0.45	$0.18	*$30,000	*$4,100
40	800,000	0.44	0.06	133,000	3,300

*Indicates a loss.

TABLE 5—COMPARISON OF RECOVERY ON BASIS OF PRODUCING AT MAXIMUM CAPACITY

Year—	Spacing at 7¼ acres per well— Gross bbls.	Net bbls.	Spacing at 40 acres per well— Gross bbls.	Net bbls.
1	240,000	203,700	450,000	381,960
2	96,000	82,420	225,000	190,970
3	27,600	23,430	125,000	107,000
Total	363,600	310,550	800,000	679,930

TABLE 6—OUTCOME FROM WILCOX ZONE WELLS PRODUCED AT MAXIMUM CAPACITY

Acres per well—	Total assumed recovery, bbls. per well	Production cost per bbl.	Interest cost per bbl. at 6 per cent	Price received for oil, per bbl.	Outcome at exhaustion Per well	Per acre
7¼	363,600	$0.40	$0.04	$1.00	$7,800	$1,100
40	800,000	0.42	0.03	1.00	47,200	1,200
7¼	363,600	0.42	0.05	1.50	151,700	21,000
40	800,000	0.49	0.03	1.50	439,900	11,000
7¼	363,600	0.42	0.05	2.00	308,000	42,300
40	800,000	0.49	0.03	2.00	773,900	19,500

Supply Greater Than Demand

During 1930 and the succeeding years, it is quite likely that the price of oil in the Mid-Continent would have been considerably higher had the Oklahoma City oil not come to the market, or if it had not been offered in quantity sufficient to affect the price. However that may be, the price of oil declined for a short time to a figure as low as 22 cents per barrel in June, 1931, which is considerably less than the single item for drilling in any of the three zones developed. The average price that has been received for Oklahoma City oil may have been in the neighborhood of 75 cents per barrel, which would not allow the Arbuckle limestone zone to show any profit, and the Simpson zone wells also remain in the doubtful class. The large production from the Wilcox zone wells would, in general, break about even with oil at $1 per barrel, unless leaseholds were very high, or unless production costs happened to be high, as has been the case in many of the wells along the west edge of the Wilcox sand, which were the first to show water in any appreciable quantity.

It would, therefore, appear that the production of oil from this field under the conditions that existed was wasteful from an economic point of view. How to prevent another such eventuality is a problem just about as puzling as that of preventing floods or droughts in agricultural districts.

Physical Waste on Surface

There has been practically no waste of oil on the surface in the Oklahoma City Field. This oil has been in considerable demand and has moved freely through the pipe lines, and loss due to evaporation from this oil in storage has probably been as low as could reasonably be hoped for at any time, now or in the future.

Physical Waste of Gas

There can be little question of the fact that there has been large waste of gas to the air in the Oklahoma City Field. In fact, there have been very few large oil fields in which this is not true. Wastage of gas to the air is now taking place in most of the oil fields of the United States and I do not see how any practicable means can be provided for preventing this waste when the demand for crude oil exceeds the demand for gas as a fuel. The price received by the producer for the gas in a large field is a mere pittance even when it can be sold at all, despite all of the arguments set forth as to the fuel value of the gas. If the producer had to restrict his production of oil to the point where all of the gas could be sold, it is doubtful whether it would ever be profitable for anyone to go into the business of producing oil.

In some fields there are wells which

produce excessive quantities of gas, and such has been the case in the Oklahoma City Field. The reason for this occurrence in the Oklahoma City Field was due largely to the practice of producing the wells at low rates, such that when they were shut in for long periods of time, the gas dissociated from the oil and made its way to the upper parts of the structure where it collected as a gas cap. Production at maximum rate, or at least at considerably higher rates, would probably have eliminated much of this evil.

Underground Waste

The Oklahoma City Field will probably never reach the ultimate recovery of 500,000,000 bbls. that has been estimated by some engineers. This is due, not necessarily to wasteful production methods, but to faulty estimates. Should it develop, however, that there has been waste in the production of oil in this field, there are weighty arguments in favor of the view that ultimate recovery has been reduced by producing the field at too restricted a rate, rather than at a rate that was excessive.

At the present time, gas-oil ratios in the Oklahoma City Field range from 250 to 1,000 cubic feet per barrel, with some cases that are higher, but as a rule these higher ratios are found in the gas-cap area.

In contrast with the Oklahoma City Field, the Seminole Field was produced under practically unrestricted methods at the beginning and throughout the major part of its productive history, and ultimate recovery has been in excess of 60 per cent for large portions of that area where maximum production practices prevailed. Gas-oil ratios, covering a period of nearly six years obtained from various leases scattered throughout the entire Seminole area are given in Table 7.

TABLE 7—GAS-OIL RATIOS IN THE SEMINOLE FIELD

Year—	Bbls. of oil	Gas-oil ratio per bbl.
1927	12,320,000	*590
1928	8,780,000	1,020
1929	8,410,000	960
1930	6,260,000	901
1931	3,540,000	870
1932	2,120,000	884
Total	41,430,000	840

*Based on atmospheric discharge pressure.

The impression has prevailed as fields grow older, especially when produced at maximum rates, that gas-oil ratios increase. This was not the case at Seminole, as may be seen in Table 7.

Strong arguments have been offered in these days of proration, favoring restriction of production to the point where the water will act as a drive, thus preventing the reduction of reservoir pressure, or at least preventing the pressure from declining rapidly. But this does not take into account the objectionable features of producing a well after the water has finally reached the well. The operators of wells along the west edges of the Oklahoma City and East Texas fields are having a difficult time in making the operation show a profit, and in East Texas the problem is complicated by reason of the fact that large bodies of oil situated at the east end of these west side properties are being swept upward by the advancing body of water to properties along the "fairway," leaving these edge properties stripped of their oil.

Water Trouble

Water invaded the wells in the Arbuckle limestone in the Oklahoma City Field at an early date, and in many cases the quantity of water necessary to be lifted was so great that wells making 50 to 100 bbls. of oil had to be abandoned, due to the high cost of lifting such large quantities of water from so great a depth. This abandoning of wells results in a loss in ultimate recovery. The production of this quantity of water in shallow fields could be done at a profit at $1 per barrel for oil, but not in wells having depth of 6,500 feet.

Most of the wells in the Simpson zone of the Oklahoma City Field are producing water, and will have to be abandoned before long. The average production from Simpson zone wells in January, 1935, was 64 bbls. per well per day. Many of these wells should be abandoned at the present time since they are undoubtedly costing more to produce than the oil is worth.

Water is now encroaching in the Wilcox zone, and with the exception of a few areas, probably this zone will be largely invaded by water within the next 6 to 12 months, although not necessarily to the point of causing wholesale abandonments. The invasion of water into the Wilcox sand did not take place to any considerable extent until the pressures had become much reduced and after most of the oil had been recovered, apparently indicating that there was not the large quantity of water under high pressure commonly supposed to have existed at the edge of this zone. From a production standpoint, however, the quantity of water that is produced adds seriously to the lifting costs, especially in deep wells completed with small casing sizes.

It has been argued that rapid withdrawals would cause oil to be trapped and, therefore, cause considerable waste. This does not appear to be reasonable, particularly in the case of close spacing where there is very little chance for any water trapping to occur after the pressures have been considerably lowered. It has been found in all cases that have come under the writer's observation that after water invades a sand, it serves as a flushing medium in moving to the well the oil remaining in the sand. So far as recovery is concerned, the water can be made to win a high percentage of recovery, but the problem of lifting the water, particularly when under a high pressure head, eventually involves so large a lifting cost that the wells must be abandoned much before the "last drop" of oil can be recovered.

Section 22-11-3, in the Oklahoma City Field is a notable case of water encroachment, and considerable comment has been made on the alleged wasteful production practices in this section. Possibly, although not certainly, greater profits could have been made from the acreage in Section 22 had the spacing been greater, and had there been less haste in extracting the oil, but it might be well not to jump at conclusions too hastily as to underground waste before the situation is analyzed.

Section Is Isolated

The SE Section 22 covers approximately 160 acres of productive Wilcox sand on which some 54 wells have been drilled. This quarter section is fairly well isolated from any large prolific area which it could drain to any extent. In fact, the earliest wells were outside of this quarter section and a greater quantity of oil may have been drained from the quarter section than has been drained into the area. The productive sand averages about 100 feet in thickness over the quarter section, and would perhaps be less than the thickness assumed. Assuming a porosity of 22½ per cent, and 100 per cent saturation, the sand pores would allow for a content of 174,550 bbls. per acre. The oil content was probably less than this quantity, due to a thinning out of the sand in the northeast part of the quarter section.

The first well in this southeast quarter of Section 22-11-3, was completed on May 29, 1931, and other wells followed in fairly rapid succession until August 29, 1934, when the fifty-fourth well was completed. High potentials were established, aided greatly by shooting the wells. The aggregate initial production was 870,000 bbls., or 16,100 bbls. per well, based on a 24-hour period.

The production of this quarter section to the end of December, 1934, was approximately 11,000,000 bbls., or about 70,000 bbls. per acre, and taking the 3 per cent pipe line deductions into account, the actual production was approximately 72,000 bbls. per acre. The oil as produced occupies only 75 per cent of the space which it occupied in the sand, because of the gas dissolved in the oil, when in the reservoir, and making this allowance, the oil removed would have occupied a space of 96,200 bbls. per acre. Comparing this quantity with the pore space of 174,550 bbls. per acre, it appears that the recovery in this quarter section to the end of December, 1934, was about 55 per cent. Production from this 160-acre tract is declining, and water has invaded about 25 wells, but the production in December added to the recovery to the extent of about 2 per cent of the original contents and considerably more oil will be recovered from this area. Based on the original contents, this recovery percentage will compare favorably with that made from the remaining part of the field where withdrawals have been at a slower rate, in fact, will compare favorably with ultimate recovery in any other part of the United States.

It was advocated at one time that the use of small tubing sizes would enable the wells in the Oklahoma City Field to be produced with smaller gas-oil ratios. When this practice was adopted, it was found in many cases that the gas-oil ratios were much higher than when flowing through open casing.

Large Casing Used

One of the most progressive and courageous procedures in the Oklahoma City Field was the completing by the Phillips Petroleum Co. of a considerable number of wells with large casing. This was done, so I am informed, in order that a large submerged centrifugal pump could be installed after production had declined to a low point and much water had entered the wells, thereby enabling the operator to lift the combined oil-water content in large quantity at low cost. It has developed that the production from these wells up to the present time, has been more than twice that of wells completed with 6⅝-inch casing. It also has been shown that input gas factors and gas-oil ratios in lifting oil from these wells with large casing are considerably lower than when gas-lifting under equivalent bottom hole flowing pressure through small casing sizes.

Powell and Wortham are fields in Texas where at the time of development, close spacing and rapid withdrawals were pointed to as examples of bad production practices, and yet the percentages of recovery in those fields are in excess of 50 per cent and 60 per cent, respectively, which is considerably higher than the recovery percentages expected of fields now under restricted production.

Quick Maximum Recovery

Prior to the last few years of necessary curtailment, it became rather widely accepted that closer spacing resulted in increased recovery through utilization of the gas to the maximum extent while the pressure of the gas in the reservoir was at its highest. Messrs. Gester and Wagy state that "to obtain a maximum yield the recoverable oil should be secured as quickly as possible and by relatively close spacing."

Mr. Collom stated in 1923: "The results of intensive drilling at Long Beach, gauged by oil recovered per acre in other fields of the state, confirm the premise that close drilling and the bringing in of a number of producers while gas pressures are high and before great quantities of gas, the expulsive force, have been wasted, will give higher recovery per acre than where the oil is taken less hastily and the gas pressures become greatly reduced meanwhile."

It seems to the writer that if large ultimate recovery is primarily the object of the operator, he should extract the oil as rapidly as possible, while the gas pressure is high, before the gas segregates from the oil, and before the water can encroach seriously into the sand. If there be too large a supply of oil, however, production must be curtailed, if the price of oil is to be held at a fair figure, whatever be the ultimate recovery.

Exports of Petroleum Products in 1934 Show Increase in Value and Volume

By HUGH D. MALLON
Washington Bureau, The Oil and Gas Journal

WASHINGTON, D. C., Mar. 18.—According to figures released by Claudius T. Murchison, director of the Bureau of Foreign and Domestic Commerce, exports of petroleum products during the year 1934 showed a marked increase over 1933 and previous years.

The figures show that the United States exported during the year $227,500,000 worth of petroleum and petroleum products, showing an increase of 12 per cent in volume and 46 per cent in value over such exports for 1933. Petroleum exports are ranked second to unmanufactured cotton which heads the list of exports, while imports of petroleum and petroleum products rank twelfth in the list with a value during the past year of $36,400,000.

During the period 1926 to 1930 the total exports of petroleum and petroleum products was valued at $524,400,000, in 1932 amounted to $208,400,000, in 1933, was $200,000,000 and during the past year jumped $27,500,000.

Figures on imports for the same period show that from 1926 to 1930 imports totaled, for the five year period, $131,900,000, $60,600,000 for 1932, and $25,700,000 for 1933, increasing during 1934 $9,700,000 in value.

EXPORTS—THOUSANDS OF BARRELS

	'26-'30	1931	1932	1933	1934
Crude petroleum	20,062	25,535	27,391	36,584	41,122
Natural gasoline	.....	.....	308	1,657	1,495
Gasoline, naphtha, etc.	52,154	43,787	33,823	25,996	21,685
Illuminating oil	19,945	12,534	10,867	8,764	9,607
Gas and Fuel Oil	37,429	26,588	17,831	18,455	25,924
Lubricating oil	10,017	7,994	6,731	8,111	7,571
Lubricating greases (1,000 lbs.)	104,129	74,081	64,768	73,362	83,500
Paraffin wax (1,000 lbs.)	336,174	290,484	235,264	248,274	199,242
Petroleum asphalt (tons)	341,746	257,231	183,934	182,171	200,972
Benzol (1,000 gallons)	28,843	21,861	3,241	8,439	9,692

EXPORTS BY VALUE
(Value in thousand of dollars)

	'26-'30 aver.	1931	1932	1933	1934
Crude oil	30,236	20,828	27,106	31,979	49,751
Natural gasoline	.....	.....	533	3,395	2,729
Gasoline, naphtha, etc.	244,577	109,301	79,081	57,290	51,384
Illuminating oil	84,049	34,796	23,732	19,209	20,792
Gas and fuel oil	42,278	23,966	16,172	18,310	28,198
Lubricating oil	91,732	62,986	48,281	55,389	58,234
Lubricating greases	5,523	3,542	2,788	2,954	3,651
Paraffin wax	15,077	8,425	6,267	6,979	7,833
Petroleum asphalt	7,424	4,941	3,168	2,861	3,381
Benzol	7,049	3,795	612	1,594	1,761

P. AND C. ELECTION

WASHINGTON, D. C., Mar. 18.—The Planning and Coordination Committee re-elected officers for the period from March 16, to June 16, 1935: J. D. Collett, chairman; Henry M. Dawes, treasurer; Fred A. Van Covern, assistant treasurer; Irwin Lamp, secretary, and John M. Cameron, assistant secretary.

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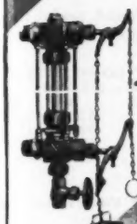
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"All-Iron" Automatic Liquid Level Gage

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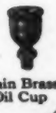
Snap Lever Oiler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Plain Compression Grease Cup

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500 LBS. WORKING PRESSURE
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"SAFEGUARD"
300 LBS. WORKING PRESSURE
500° F.

"NAVY TYPE"
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500° F.

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THE three gages shown here are very popular in the oil industry because of their consistently dependable operation. All of them are ruggedly built of the highest grade materials by an organization that has had 48 years experience in the manufacture of quality products. The "Navy Type" is made from Navy Bronze Composition M, the "Safeguard" from high grade steam metal bronze and the "All Iron" from a modern electric iron alloy.

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DETROIT, MICHIGAN
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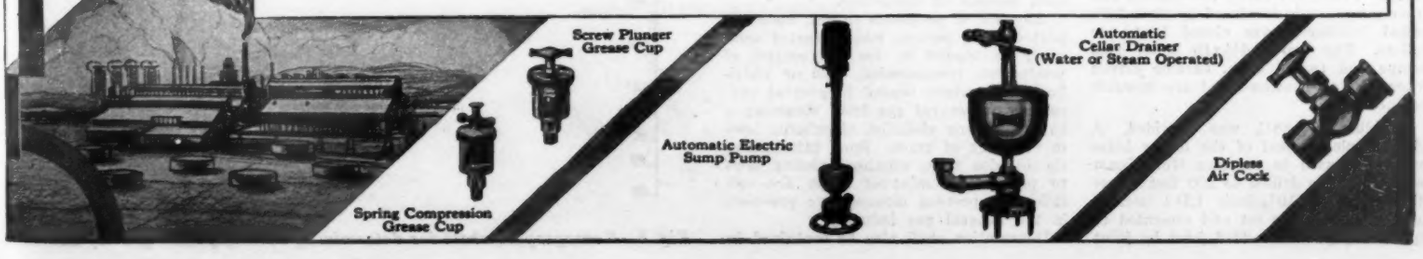
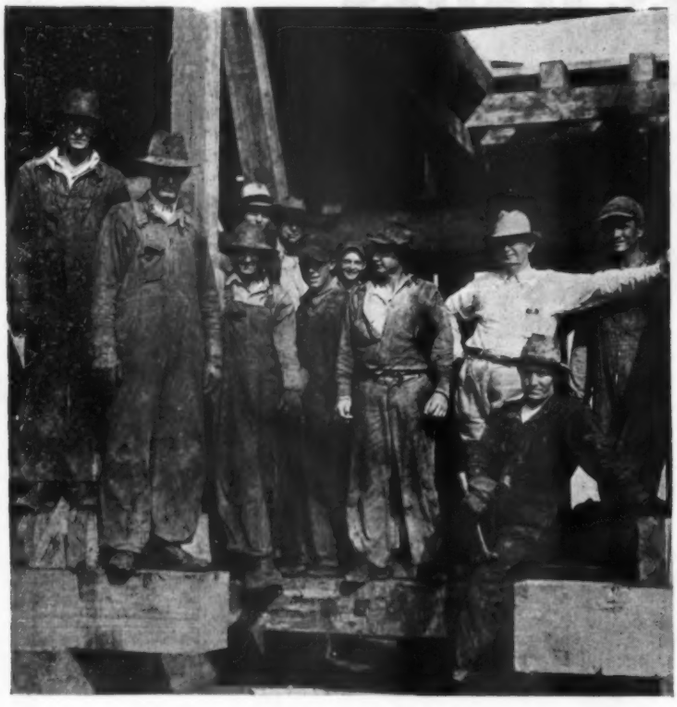

Screw Plunger Grease Cup
Automatic Cellar Drainer (Water or Steam Operated)
Automatic Electric Sump Pump
Dipless Air Cock
Spring Compression Grease Cup

Split Ring Connectors Used in Construction

(Continued from Page 13)

sembled in the field. Treating was done after fabrication. The structure was shipped to the field completely knocked down and was assembled on location.



Crew on Texas Co.'s new deep wildcat test being drilled on Bryan Mound, near Freeport, Brazoria County, Gulf Coast. At extreme left are Dick McGuire and Clarence Delaney, drillers. In the extreme rear at left are W. J. Price, student engineer, and W. F. Herbert, engineer. At right, with arm outstretched and wearing light shirt is H. L. Coder, drilling foreman. Looking over Mr. Coder's arm is Ed Terrell, gang pusher for Campbell & Locke, rig builders on the job. Others in the picture and not identified are members of the crew

The main trusses were assembled on the ground and then the cross framing trusses were assembled on the main trusses.

Erection of the structure, including the derrick, was done by Campbell & Locke, rig builders, of Houston.

The engine foundation and substructure were erected as two members in the field and then tied into each other using alligator (tooth) rings. They now constitute one integral unit.

The pipe rack also is of the same principle of construction. It consists of four 20-foot sections, 6-foot ramp support with the total length 86 feet.

Drilling Equipment

In drilling the test, a unitized drawworks weighing 30,000 pounds, and equipped with roller bearing drum shaft is being used. This is driven by an oil bath 12x12 steam engine. The crown and traveling blocks permit use of 10 lines, but 6 lines of 1⅛-inch plough steel wire rope now are strung. The swivel is a 6-inch 80-ton model. The hydraulic rotary, being used in the conventional fashion, is chain driven.

There are two 14½x7¼x18 slush pumps. Power for these, the engines and other purposes, is furnished by three 250-pound 100-horsepower closed bottom boilers. The two 7x4½x10 boiler feed pumps and two 4 k.v.a. turbine driven generators are unitized and are movable as one unit.

A cellar 10½x8½ was provided. A 26-inch hole, typical of the larger holes now being used in starting Gulf Coast deep tests, was drilled to 250 feet where 20-inch O.D. (19¼-inch I.D.) welded conductor pipe was set and cemented to top. The pipe was welded joint by joint as it was run in the hole on March 17. The test was started on the night of March 14.

Modern mud conditioning practices will be followed throughout the drilling of the test. The mud system is equipped with a steel mud ditch and two late type vibrating screens are being installed. These will be driven by two steam turbines.

R. L. Coder is drilling foreman in charge of operations.

Natural Gas Industry Investigation by Senate

WASHINGTON, D. C., Mar. 18. — A senate investigation of the natural gas industry is proposed in a resolution offered by Senator Couzens of Michigan. The resolution was referred to the Interstate Commerce Committee for consideration. Its purpose is to ascertain whether any federal legislation is necessary to control the industry in the interests of the consumers and the prevention of monopoly.

The resolution authorizes a subcommittee of the Interstate Commerce Committee to obtain information relative to the production, transmision, sales and distribution of natural gas and to submit a report on the following subjects:

Those engaged in production, transmission, sale and distribution of natural gas, and those interested in financing such persons or companies.

Any act or proposals to act, upon the part of such persons which created monopoly or tended to, for the control of production, transmission, sale or distribution, or which tended to prevent consumers of natural gas from obtaining a supply, or any violation of existing laws in restraint of trade. Such information should also state whether existing laws to prevent restraint of trade are sufficient to prevent monopolistic practices in the natural gas industry.

Information shall also be contained in the report to assist in determining whether pipe line carriers should be divorced from natural gas companies.

Senator Couzens also requests that information be included showing whether or not any member of the industry has acted to prevent publicly owned distributing companies from obtaining a supply of gas.

Particular attention will be paid to the sources and volume of supply, as well as to the subject of waste. Deliberate waste, if any, will be closely scrutinized and included in the report.

The Federal Trade Commission is ordered to assist the committee by furnishing any data on file which may be pertinent.

Senator Couzens said he has heard that there is a conspiracy to keep Detroit, and Michigan, from getting cheap gas, and the senator, being interested in getting cheap gas rates for his constituents, wants to look into the matter.

While there is no immediate connection with the proposed PWA pipe line construction from the Panhandle to Detroit the senator has been advised that some representatives from the PWA will talk things over with him in a few days. The results of the investigation will be of interest to them, the senator said.

TESTING KENTUCKY BLOCK

Location for a test on a block of approximately 120,000 acres has been made 3 miles west of Golden Pond, Trigg County, Kentucky, by the Ada Belle Oil Co., of Tulsa, incorporated recently to develop properties owned by the company in western Kentucky and northwestern Tennessee. The company was organized by R. Otis McClintock and Fred G. Moser of Tulsa and A. I. Levorsen of Houston, Tex.

Boiling Point-Gravity Constant Index of Lub

(Continued from Page 16)

er the value the more paraffinic. It has the advantage over the viscosity-gravity constant that it may be used over the entire range of the oil. While not above criticism, it has been found useful, and is submitted in the hope others may find it so.

TABLE 1—VALUES OF CONSTANTS IN EQUATION: G = B + K LOG T

Crude—	B	K
Buckeye	171.5	—52.65
Mid-Continent	178.6	—57.80
Winkler	186.0	—62.70
Spindletop	194.5	—68.76

TABLE 2—BOILING POINT-GRAVITY CONSTANTS FOR SUCCESSIVE FRACTIONS OF CRUDE

	Buckeye		Mid-Continent		Winkler		Spindletop	
50% BP.	BP.G.C.	V.G.C.	BP.G.C.	V.G.C.	BP.G.C.	V.G.C.	BP.G.C	V.G.C.
87.5	177	....	184	....	182	....	205	....
112.5	178	....	180	....	182	....	196	....
137.5	172	....	179	....	182	....	193	....
162.5	171	....	179	....	184	....	194	....
187.5	171	....	179	....	185	....	195	....
212.5	171	....	179	....	186	....	195	....
237.5	171	....	179	....	187	....	196	....
262.5	172	....	180	....	188	....	194	....
287.5	172	....	180	....	189	....	193	....
312.5	172	....	180	....	190	.876	191	.878
350	172	.800	180	.837	190	.884	190	.878
375	173	.804	179	.838	189	.886	188	.875
400	172	.800	179	.842	187	.882	188	.876
425	172	....	179	.843	186	.880	187	....

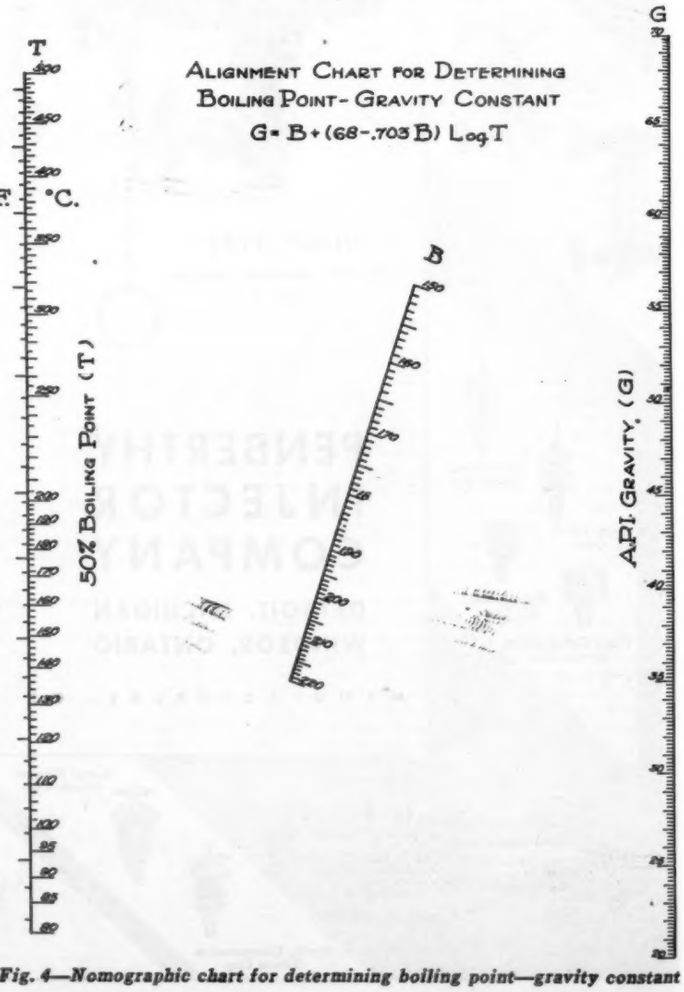


Fig. 4—Nomographic chart for determining boiling point—gravity constant

Inflation and Deflation

It is easy to inflate your gasoline gallonage if you cut the price but what is the use if it deflates your profits?

Dubbscracking inflates the quality of your gasoline and deflates the cost of making it You don't have to cut the price to sell Dubbscracked gasoline—there is never enough to go round

Inflate your profits

The chemical cop helps inflate your profits He abolishes rerunning and deflates treating costs He deflates gum-bugs too before they start

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THE OIL AND GAS JOURNAL

PRODUCING REFINING NATURAL GASOLINE PIPE LINE

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Mid-Continent Refiners

The Western Petroleum Refiners Association through Howard Bennette as president had gained the confidence of independents and majors alike. Through the association he was able to reflect the needs and desires of the Mid-Continent refining industry and in these troubled times that work must be continued.

The Western Petroleum Refiners Association can continue to get essential things done that cannot be handled successfully by individuals or small groups, and so long as the association is so constituted as to reflect the true will of the two hundred or more refining companies operating plants in the Mid-Continent, its voice will be heard.

Facts Dispel Fiction

The public has been told so often that "the little fellow is being driven out of business by the big fellows" that it is disconcerting to discover one business in which this is apparently not so.

Yet that seems to be the remarkable conclusion reached in the Petroleum Administrative Board's analysis of the replies to the questionnaires sent out by the Cole sub-committee of the House Committee on Foreign and Domestic Commerce.

These replies were received from 105 companies, including 35 integrated companies, 56 non-integrated companies and 14 jobbing firms, representing the great bulk of the petroleum industry, and are accepted by the congressional sub-committee and the Petroleum Administrative Board as representative of the industry at large.

Far from finding the large integrated companies were driving their small non-integrated competitors out of business the Petroleum Administrative Board's analysis shows that the little fellows made a gain of slightly less than two per cent in production and a full two per cent in sales. They also showed a gain in terminals and bulk stations.

During the entire period the ratio between integrated and non-integrated companies has been remarkably steady. There has been no evidence of the wholesale elimination of "little fellows" that we are constantly hearing about from loose-tongued agitators, political or economic.

The results of this Congressional questionnaire check with the conclusions of the Federal Trade Commission's investigation of the gasoline situation a few years ago and with negative results of all other investigations started to expose monopoly in the oil business.

The facts were against them.

Regulation or Regimentation?

Arguments against the interstate oil compact assert that "the principles upon which the idea of the interstate compact is based find their fullest expression in the Thomas Oil bill" now before Congress.

The basic principle at stake goes much deeper than that. It is a choice between regulation and regimentation, between co-operative regulation by the states and the industry, or flat Federal control from the well to the filling station, between the status of a free industry and a public utility.

The evolution of Federal control under the Petroleum Administrator has demonstrated that government control must have public utility legislation. It must include price fixing and price fixing means public utility fetters for the industry.

The progress already made assures that the compact can be made effective before Congress adjourns, despite predictions to the contrary. Doubts of its permanence may be set at rest by its effective working. On the other hand there are no doubts about the permanancy of Federal regimentation once it is riveted upon the industry.

A Bad Example

Possibly the average taxpayer has not thought of it but he can thank public indifference to the growth of the gasoline tax for the present plague of nuisance and sales taxes which beset him on every side.

The success of the tax on motor fuel showed the tax levying bodies how easy it was to extract hundreds of millions from the taxpayers' pockets if, instead of annual or semi-annual drafts in bulk, the tax was collected in nickles and dimes on everyday purchases.

It worked so smoothly in the case of the gasoline tax for highways that the revenue piled up was a constant temptation to the legislator to divert it for other purposes and hundreds of millions have thus been extracted from the motor owner in addition to the general taxes which he paid with all other citizens.

The very ease with which the tax on gasoline could be sidetracked into the general funds encouraged legislators to keep on increasing it.

Seeing how successful this "nickeling and dimeing" the motorist could be in extracting millions without the squawk that annual levies on property or incomes provoked, the legislators conceived the happy idea of extending it into the sales tax and other nuisance taxes hoping the taxpayer would be equally complacent.

Nevertheless there is a suspicion that the taxpayer can be "pushed just so far". One of these days he may kick back.

New Texas Bill

The further reduction of "hot" oil production in East Texas and the vigorous effort under way in the Texas legislature for general revision and strengthening of the oil conservation laws, particularly the continuance of the market demand provision as a permissive factor in the fixing of allowable production, were encouraging features of the week's news.

Experience in the courts and also in the field has indicated the advisability of amendments that will stand the test of judicial scrutiny and meet the wiles of the law evaders.

The fact that the revision of the conservation laws is not a controversial measure at Austin and that the legislature seems sincerely desirous of protecting the State's oil resources is hopeful.

Constructive action at Austin promptly taken would be further notice to Congress that no radical oil legislation is needed at Washington.

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The facilities and resources of this bank and the broad experience and intimate understanding of its Officers and Directors, enable the National Bank of Tulsa to render a distinctive type of service to Mid-Continent Oil Operators in negotiating production loans and financing their operations.

Mid-Continent Operators are invited to submit their financial requirements to this bank, where they receive prompt, intelligent and careful consideration.

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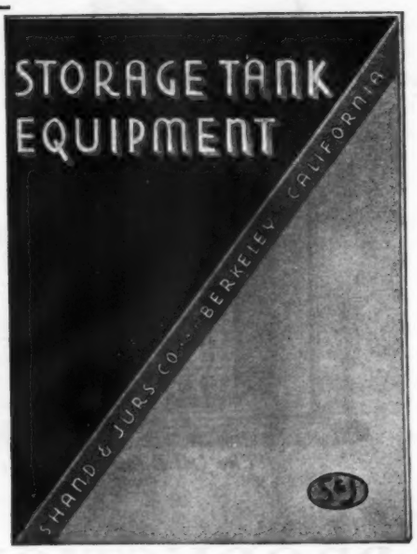

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NEWS FROM FOREIGN LANDS

VENEZUELA

Increased world consumption of crude and products coupled with the trend toward supplying this demand from the nearest and most economical source of supply had the economic effect of broadening the demand for Venezuela crude. As a result, Venezuela produced more in 1934 than in 1929, the previous peak year. During 1934 Venezuelan output is estimated at a total of 139,382,000 bbls., a daily average of 381,868 bbls., against 120,442,000 bbls. in 1933, a daily average of 329,978 bbls. This is an increase of 51,890 bbls. a day.

In spite of the fact that Venezuela produced more in 1934 than in 1929 its share of world production is slightly less than in 1929 and 1930.

Year—	Total	Dly. av.	Per cent of world
1929	137,535,230	376,810	9.22
1930	136,987,662	375,309	9.63
1934 .....*139,382,000		381,868	9.15

*Partly estimated.

During the latter part of 1934, Venezuela produced its first billionth barrel of crude. Only three other crude producing countries have attained this distinction: United States, Russia and Mexico. Venezuela still ranks third in producing countries. No new fields were discovered during 1934.

Exports of crude and products for 1934 is estimated at 133,400,000 bbls., an increase of 16,107,000 bbls., or 13.73 per cent compared with 1933.

MEXICO

A total of 144 wells were drilled in Mexico in 1934, according to a final report of the petroleum division of the Department of National Economy. This represented a substantial gain from the 93 drilled in 1933.

Of the 144 drilled in 1934, 57 were productive, their initial production totaling 33,777 bbls. daily. A total of 249 permits for drilling were issued in 1934. This rate was maintained over the first two months of 1935.

The government in its report points out that crude oil production in 1934 totaled 6,068,672 cubic meters or 38,171,946 bbls. having a value of 127,159,475 pesos. Since 1901 the Mexican crude oil production has totaled 276,211,122 cubic meters or 1,737,433,954 bbls. The total value of this oil is placed at 3,273,384,404 pesos. The 1934 production was the largest since 1930.

Natural gasoline production obtained from plants located in the fields increased 27 per cent in 1934 over 1933. The 1934 production totaled 46,521 cubic meters or 292,618 bbls.

PANAMA

A new law which will become effective April 3 will materially increase the duties on gasoline and lubricating oil imported into Panama. The exact duties have not been announced but it is understood that they will represent increases of 50 per cent or more. These import duties are being increased despite the fact that the government is increasing a list of other commodities and manufactured products which are allowed to enter the country, duty free.

It is said that the government is anxious that one or more companies build refineries in Panama to take care of domestic requirements. To that end the duties on crude oil will not be increased.

The object of this move is to reduce prices on gasoline in Panama, government officials claiming that prices are excessive. The government under legislation passed the latter part of last year was authorized to enter the retail end of the gasoline business. The government can if it sees fit to build storage and provide any other facilities necessary to distribute gasoline. It also has authority to compel the blending of alcohol with gasoline in securing a motor fuel. This plan has been advocated by producers of alcohol who have surpluses at this time. These producers hope that with an increased import tax on gasoline that the gasoline-alcohol blends will be more attractive to consumers. The actual cost of these blends in the past have been in excess of the straight petroleum products. Some consumers have also complained of the performance obtained with the alcohol-gasoline blend which is sold under the trade name of "Alcoholina."

GERMANY

Official government reports summarizing developments in Germany over the past year are again calling attention to the desirability of increasing crude oil production and also the output synthetic products which can be substituted for petroleum gasoline and other products.

The production of crude oil in Germany, the official comments point out, increased from 232,600 tons in 1933 to 312,800 tons in 1934. This gain of 80,000 tons provided for only a small part of the gain in demand for petroleum products. To take care of this gain it was necessary to import 2,811,400 tons of crude oil and refinery products, a figure which compares with the 2,437,400-ton total for 1933. It is estimated that the actual increase in demand for petroleum products in 1934 over 1933 was approximately 500,000 tons.

Following are the imports for 1934 and 1933 (data in tons):

Products—	1935	1934
Crude oil	276,700	280,600
Gasoline	1,158,300	1,004,700
Kerosene	98,200	97,400
Gas oil	639,900	467,300
Lubricating oil	322,000	276,300
Fuel oil	316,200	310,800

ITALY

Reports from Italy indicate that the government is approving temporary permits covering the importation of petroleum products and the operation of domestic refineries pending final adoption of a program authorized by law in the early part of 1934. The law which became effective in February, 1934, had for its purpose the development of a domestic refining industry which would supply practically all the petroleum products required in Italy. A licensing system was established which was scheduled to become effective the latter part of 1934. Permits were also to be issued covering the importation of products pending the time when the local refineries would be in a position to supply all requirements.

It was anticipated that by early 1935, the four companies now having refineries in Italy with the possible addition of one or two operators would have plant enlargement programs under way at old plants or entirely new plants under construction. Applications were filed last fall.

According to reports from Italy the governmental approval of applications has been delayed due in part to disagreement among officials as to the best plan to be adopted from the standpoint of supplying present domestic requirements and providing for future emergencies. The matter of national defense was one of the primary factors in the decision to build up a large domestic refining industry. There have also been suggestions of changes in regulations by the oil interests involved. The provisions in regard to storage were considered highly burdensome and there are other details which private interests concerned desire to see changed before they make large expenditures in refinery construction.

It is now said that the government is approving temporary permits covering the importation of petroleum products and has also approved permits covering refinery operations. These permits may extend through 1935 as they can be supplied with present refining facilities or they may be changed to provide for larger refinery output should the general program be adopted.

The four principal refining organizations in Italy are the A.G.I.P. (Azienda General Italiana Petroli) and the operating subsidiaries of the Standard Oil Co. (New Jersey), Shell and Socony-Vacuum Oil Co., Inc. The A.G.I.P. is controlled by the government.

The permits approved for these concerns cover the bulk of the imports into Italy and all of the refinery allocations. The announced import permit for the A.G.I.P. totals 407,000 tons, divided as follows: Gasoline, 80,000; kerosene, 55,000; gas oil, 35,000; fuel oil, 220,000; lubricating oils, 17,000. The Standard unit permits total of 458,500 tons, divided as follows: Gasoline, 150,000; kerosene, 53,000; gas oil, 78,500; fuel oil, 160,000. The Shell permit covers 348,000 tons divided as follows: Gasoline, 55,000; kerosene, 40,000; white spirit, 7,500; gas oil, 80,000; fuel oil, 150,000; lubricants, 8,000. The Socony-Vacuum permit covers 15,000 bbls. of lubricating oil. Other import permits have been approved for concerns which do not operate refineries. Additional permits are pending and will be approved later.

The permits of these four concerns covering refinery operations total 348,500 tons, divided as follows: A.G.I.P., 156,000; Standard, 69,500; Shell, 80,000 and Socony-Vacuum 43,000. These permits cover the following expected output of finished products: Gasoline, 170,000 tons; kerosene, 40,000; white spirit, 5,000; gas oil, 80,500; lubricants, 26,000; other products 27,000.

According to final government reports, imports of crude oil and refinery products in 1934 totaled 2,636,113 tons, divided as follows (data in tons): Crude oil, 177,292; gasoline, 408,100; kerosene, 177,377; lubricating oil 109,100; residual fuels, 1,764,200.

The crude oil production, all of which was refined in Italy, totaled only 19,942 tons. This production added to the imports indicates a total demand for petroleum products in Italy of 2,655,000 tons in 1934. This amounts to approximately 50,000 bbls. (42 gallons) daily.

The government report also shows that despite the increased consumption of gasoline and some of the other petroleum products in Italy, the refinery output in 1934 was less than in 1933. The production of gasoline was 125,000 tons, a decline from the 163,000-ton production of 1933. The 1934 output of gasoline which amounted to 2,400 bbls. daily was approximately 25 per cent of the total domestic consumption of 10,000 bbls. daily. The refinery production of residual fuel oils in which the government is particularly interested due to the large requirements of its navy and shipping interests totaled 71,500 tons in 1934 and 138,700 tons in 1933. Under the new plan, crude oil of certain specifications and residual fuel oils, are exempt from import duties.

View of the refinery and compounding plant of "Polmin" Panstwowa Fabryka Olejow Mineralynch Rafinerja located at Drohobycz, Poland

TANKERS

The International Tanker Owners Association, Ltd., at a meeting held in London, agreed to continue the plan of tanker operation which the association has sponsored over the past nine months. The plan provides for payments to owners of tankers not in service. It was stated at the meeting that the plan has tended to stabilize tanker rates. For the first six months of the plan tankers not in service were paid 2s 6d a ton gross per month or a total of 15s 4½d a ton gross for the entire six months.

Gasoline Firmer in Group 3 Market and Rising Trend Seems Unlikely to Be Interrupted

By T. F. SMILEY

Although the gasoline market in the Oklahoma (Group 3) area lacked both the volume and the liveliness which marked it a week or so ago, prices were firmer and nothing in sight seemed likely to interfere with a continuance of the rising trend as various parts of the country emerge from winter weather conditions and roads free of snow and slush invite increased use of motor cars.

Cold and snow are still keeping their grip on large areas in the north and until their hold is broken they will continue to exert a deterrent influence on motor fuel consumption. Flooded districts in the Mississippi Valley, with their impaired roads, have been a depressant on sales, and in many regions which look to Oklahoma for their gasoline some of the early signs of spring appear to have been a little joke.

Jobber and Broker Buying Off

Diminution of jobber and broker buying was observable this week. Reasons for the falling off were not clear beyond the fact that this division of the trade seemed to feel some doubt concerning the ability of present quotations to hold up. A minor setback was declared to be possible before the motor fuels start in earnest on their spring rise. Reports indicate that business done by marketers, dealers and retailers in southern Missouri, southern Kansas and parts of Oklahoma and Arkansas since Christmas has been far from profitable, with floods and bad roads serving to prolong unsatisfactory business. The total of discouraging conditions in recent months appears to have created among jobbers and brokers an unwillingness to attach much significance to improving prospects and a disposition to wait till prospects have been converted into accomplished facts.

Among reasons for optimism observers mention the gasoline production allowable of 34,520,000 bbls. fixed for April, compared with the 35,860,000 bbls. set for the current month. As March has 31 days and April has 30, the daily allowable for April is 1,150,666 bbls. against a daily allowable of 1,156,774 bbls. for March. In view of the fact that consumer buying already is beginning to climb and that it will increase still more rapidly in April, the desire not to allow gasoline production to outrun consumption and thus create excessive surplus stocks seems evident. Even though it is recognized that contraction of the April allowable is designed in part to correct conditions resulting from previous overallocations, the fact remains that the policy indicated by this limitation of output affords ground for increasing hopefulness.

Buying of surplus stocks of the smaller refiners by integrated companies in the Mid-Continent continued to exercise a distinctly buoyant influence on prices. In fact, even those who expressed lack of confidence in this course as a permanently stabilizing plan conceded, rather grudgingly in some cases, that it was the principal factor in the present rising trend of tank car gasoline prices in Oklahoma.

Nothing had developed in the East Texas situation to cause new concern, and evidence was appearing that the trucking of illegal gasoline to consuming points inside the State was likely to decline on account of fines imposed on owners of trucks caught transporting this material.

Natural gasoline had no reason to be ashamed of its showing in this its regularly dull season. A moderately steadier tone was apparent in both the 26-70 and the stabilized grades, and the former was able to command a slightly better price than it did a week ago.

Kerosene Finding Its Place

Kerosene, which for weeks enjoyed the distinction of higher quotations than low-octane gasoline, has settled down into its accustomed place in the scale. There was a slight easing of this product, with supplies plentiful, but the market steadied early this week, and quotations, which had softened a bit, recovered their ground. Besides the agricultural demand for kerosene at this season, substantial quantities are purchased each spring and fall as a stove fuel in rural homes where it is desired to have "just enough fire to keep the chill off."

Although the season of strong demand for distillates and furnace oils is past, the market in these products was reported to be a little firmer this week, owing to the fact that refiners are turning from them to the manufacture of tractor fuels. The supply of distillates and furnace oils being thus curtailed, there is actually right at this juncture a faint steadying of prices in the face of falling demand.

In some cases refiners who have dropped distillates and furnace oils are now making fuels specially designed for tractor use. The prices closely parallel those paid for low-octane gasoline. The gravity of these tractor fuels runs between 40 and 46, the endpoint from 450 to 550 and the initial from 160 to 200.

Wax in Sharp Decline

Wax, which has been exhibiting growing signs of weakness for more than a month, went into a rapid decline in the past week. Demand was virtually at a standstill and quotations were sharply off. Although spring always sees the wax

(Continued on Page 30)

Refined Oil Market Barometer

Increasing firmness in gasoline is exhibited in virtually all areas, with indications pointing to nothng more than minor interruptions of the spring rise. With danger of excessive stocks diminishing as a result of interrefinery buying, the market is beginning to assume a more cheerful aspect. Heating oils manifest contraseason steadiness. Naturals experiencing seasonal slump.

Mid-Continent.—Gasoline continues strength. Kerosene steady. Naturals weak. Lubricants holding well. Wax weak.

East Coast.—Gasoline slightly improved. Furnace oils, gas oils and Diesel fuels off. Wax weak. Lubricants unsatisfactory.

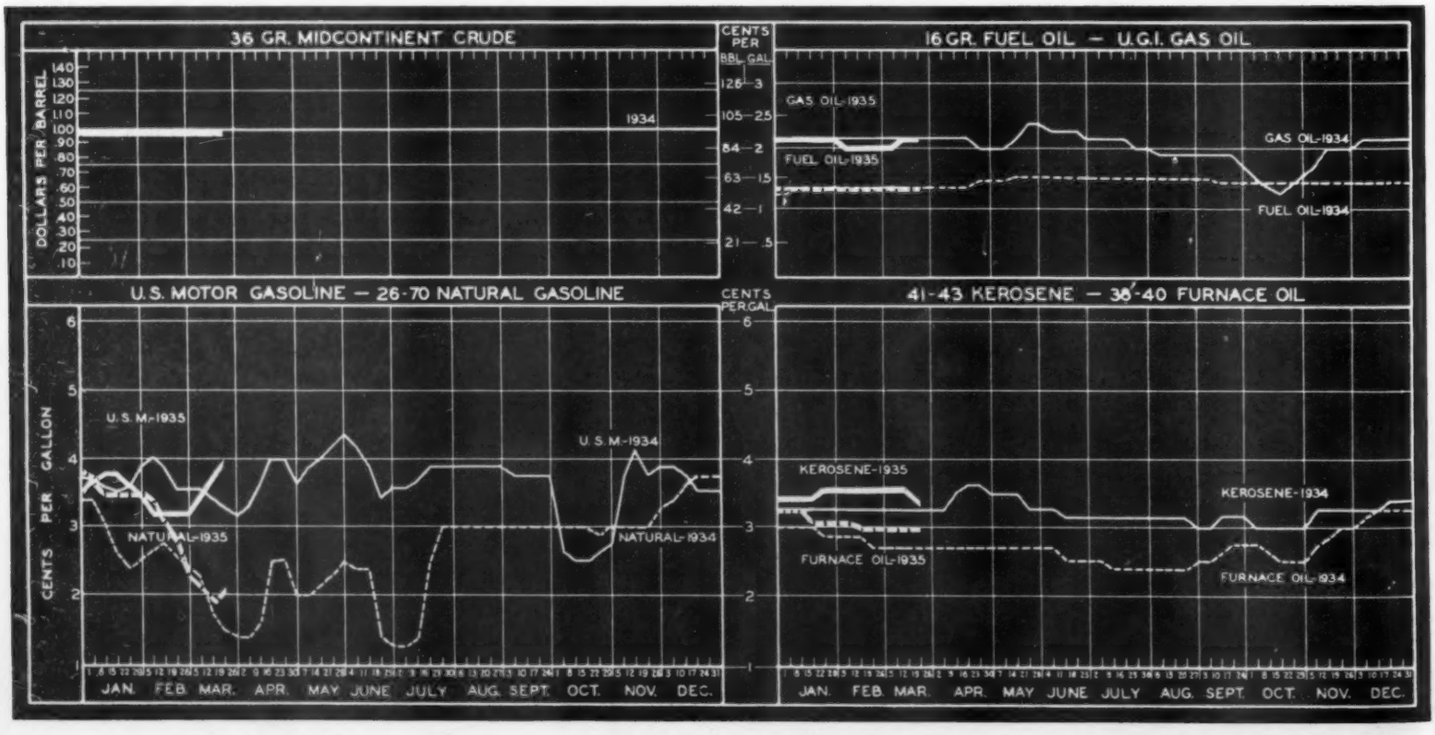
Gulf Coast.—Gasoline somewhat firmer. Little change in rest of the market.

Pennsylvania.—Gasoline stronger. Kerosene firm. Drop in neutrals expected.

California.—General market soft. Natural gasoline weak.

Chicago.—Gasoline stronger. Kerosene steady. Heating oils firmer.

Representative Mid-Continent Quotations on Crude Oil and Refined Products Basis Oklahoma (Group 3)



Reductions in Furnace Oil and Wax in the East; No Definite Change in Other Products

By C. O. WILLSON
New York Bureau, The Oil and Gas Journal

NEW YORK, Mar. 18.—Further price reductions in furnace oils and refined wax with no definite changes in the weak or unsettled position of the other products summarizes developments in eastern refinery markets over the past week.

Major sellers in this territory reduced their prices on Nos. 1, 2, 3 and 4 furnace oils one-fourth cent last week. The same reduction applied to gas oils and Diesel fuels for tank car delivery. Prices in effect by the Standard Oil Co. of New Jersey on March 15 in the New York harbor area were as follows (per gallon):

Product—	Price
Standard industrial	.04
Standard distillate	.04¼
Standard gas oil	.04¼
Furnace oils:*	
Medium (No. 2); heavy (No. 4)	.04¼
Light (No. 1)	.05¼
Diesel fuel oil (shore plants)	.04¼

*One-fourth cent less for delivery to barges.

Prices of other major companies for similar products were in most cases the same. There was some dumping going on from smaller sellers and scattered sales were reported one-fourth cent under the above quotations. Many tank wagon and tank car sellers in the furnace oils are looking forward to the end of the furnace oil season and with more supplies on hand than they had a year ago, they are not hesitating to cut prices one-fourth or more cents per gallon to get business. This situation is held responsible for the general price declines.

Some factors in this market think that tank car prices on distillates and gas oils at the principal eastern selling points may drop an additional one-fourth to one-half cent due to the efforts of a few operators to unload over the next 30 to 60 days. Past history indicates, however, that major refinery operators do not participate in these dumping operations when they apply to distillate and gas oil. These cuts have a definite value as charging stock in the manufacture of gasoline aside from their market position as fuel, and when prices drop too low most of the larger operators start storing. Just where this check on price declines will start operating in the present situation is largely dependent on trends in crude oil and gasoline over the next few months. One operator pointed out last week that distillate or gas oil at a refinery cost basis of 4 cents per gallon was cheaper raw material in the manufacture of gasoline than was crude oil figured at $1 per barrel at Mid-Continent wells. He predicted 4 cents as the bottom for all overhead distillate and gas oil products in the New York harbor area.

The larger sellers are quoting 5½ cents for kerosene in New York harbor and several other eastern seaboard points, but the product is not strong at that level, which is three-fourths cent under recent quotations. The kerosene market has weakened at the Gulf, where material was quoted to eastern buyers under 4½ cents last week.

The gasoline market at the Gulf for coastwise movement appears to be slightly firmer than it was a week ago and that fact has brought encouragement to sellers in this territory. The prices generally quoted, basis New York, are 5¼ cents for low octane U. S. Motor, 5½ cents for middle octane, 5¾ cents for 65 octane and above, and 6 cents for ethylized branded grades. The low material has been sold as low as 5 cents. There has been some improvement in the jobber demand for gasoline since the first of the month, and this seasonal improvement should continue. There is still gasoline both in this territory and the Gulf Coast in cargo lots which can be classed as "distress." Efforts are still being made to find outlets for this material to keep it from being dumped on the jobber markets at lower prices. Buying programs are being discussed and outlined, and several in touch with these plans are still confident that the gasoline market will present an improved appearance by the end of March or April 15. The market in this territory also has observers who take an extremely pessimistic view of the gasoline and crude oil situation over the next 90 days.

Government Reports

The January report of the Bureau of Mines recently released covering eastern refinery operations is perhaps the best indicator of what is wrong with refinery markets in this territory. The accompanying table summarizes the report for East Coast refinery operations with comparative data for January, 1934, and December, 1934 (data in barrels).

So far as crude runs to stills are concerned, January operations were 15,000 bbls. less daily than in January, 1934, and December, 1934. The production of gasoline dropped in January compared to December but this decline was not enough to prevent a large gain in stocks which totaled almost 3,000,000 bbls. for the month.

OUTPUT

	Jan., 1935	Jan., 1934	Dec., 1934
Crue oil runs to stills	13,547,000	13,971,000	14,069,000
Gasoline	5,936,000	5,852,000	6,242,000
Kerosene	974,000	902,000	1,006,000
Gas oil and distillate	1,182,000	1,542,000	1,287,000
Residual oils	3,994,000	3,663,000	3,954,000
Lub. oils	660,000	680,000	658,000
Wax (lbs.)	16,240,000	2,400,000	19,320,000
Coke (tons)	12,000	13,600	11,000
Asphalt (tons)	44,600	61,400	51,700
Road oils		30,000	1,000

STOCKS END OF MONTH

Gasoline*	16,059,000	15,693,000	13,260,000
Kerosene	1,484,000	1,235,000	1,312,000
Gas oil and distillate	3,884,000	2,684,000	5,358,000
Residual oils	6,913,000	3,532,000	7,165,000
Lub. oils	2,218,000	2,295,000	2,316,000
Wax (lbs.)	59,012,000	28,573,000	57,154,000
Coke (tons)	17,700	14,200	23,900
Asphalt (tons)	98,200	104,800	95,300
Road oils	31,000	102,000	48,000

*At refineries, bulk stations and pipe lines.

Stocks Increase

The stock situation at the end of January when compared with the same period in 1934 is more illuminating as a reflector of basic conditions that are the data on current output of products. It will be noted that the stocks of all the major products on January 31 were substantially higher than on the same date last year with the exception of lubricating oil. This situation in the case of gasoline is in contrast to that over the greater part of 1934 when stocks were lower than on the same date in 1933. It becomes more and more apparent that too heavy crude runs to stills since early December have partially destroyed a favorable inventory situation in motor fuels brought about slowly during the latter part of 1934.

It will also be noted that stocks of kerosene increased 170,000 bbls. in January and at the end of the month were 250,000 bbls. greater than on January 31, 1934. There was a large seasonal withdrawal of gas oil and distillate stocks in January, but stocks at the end of the month were 1,200,000 bbls. or approximately 50 per cent greater than on January 31, 1934. Stocks of residual oils on January 31 were approximately 100 per cent greater than the year previous and stocks of petroleum wax increased more than 100 per cent.

Available data do not indicate that this comparative situation improved over the past six weeks. The price trends in recent weeks show that the pressure of these stocks has resulted in some material being forced on the market at constantly lower prices. These market developments supported by the Government's statistical data substantiate the claims of those who are advocating a reduction in refinery operations over the next 60 days to bring about a more healthy condition in regard to supply and demand of special importance in the case of gasoline with the main gasoline demand period under way within the next few weeks.

Petroleum Wax

With a steady month to month increase in wax stocks over the past year, manufacturers in this and other refining areas in the United States are facing a critical situation. The largest refiners in this territory reduced their quotations on the refined grades for both domestic and export movement one-half cent last week. These lower prices have actually been quoted on a few grades by smaller sellers for some time, and it is not believed that the price situation has been finally settled. Manufacturers have reduced their output of wax, but demand is still far behind normal for the refined grade.

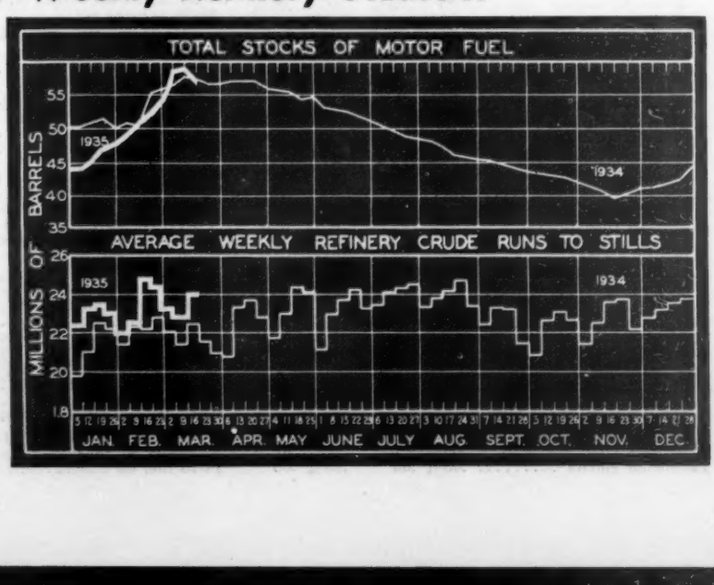
The market on the crude scale grades of wax in this territory and New Orleans has been termed "demoralized." A few factors have been dumping material on both the export and domestic markets without regard to price. Sales of 124-126 under 2.25 cents per pound were reported last week. However, the largest manufacturers state that they are not selling at the low prices. An effort is being made to restore order in this market and prevent an even more serious collapse in the refined and crude scale grades.

The market on steam refined and bright stocks continues unsatisfactory to sellers with no important price reductions reported over the past week. The export demand for paraffin base stocks and oils is reported slow.

American Petroleum Institute Weekly Refinery Statistics

Week Ending March 16, 1935

	Capacity reporting per cent	Daily crude runs (bbls.)	Finished motor fuel (bbls.)	Gas oil and fuel oil (bbls.)
East Coast	100.0	463,000	17,728,000	10,028,000
Appalachian	93.3	102,000	2,166,000	905,000
Indiana, Illinois, Kentucky	94.6	348,000	10,153,000	4,326,000
Oklahoma, Kansas, Missouri	83.7	264,000	5,541,000	3,939,000
Inland Texas	47.6	109,000	1,465,000	1,869,000
Texas Gulf	97.7	536,000	7,199,000	8,377,000
Louisiana Gulf	96.4	92,000	1,421,000	3,570,000
North Louisiana and Arkansas	83.7	39,000	233,000	369,000
Rocky Mountain	66.7	38,000	861,000	732,000
California	96.9	414,000	10,639,000	64,910,000
Total United States	89.8	2,405,000	57,406,000	99,025,000



REFINERY AND CRUDE PRICES

Quotations on refined products are for interstate or export movement except as otherwise noted

The following quotations are exclusive of the federal excise taxes of 1 cent a gallon on gasoline and 4 cents on lubricating oils.

Refinery Gasolines

	Mar. 19		Mar. 12	
OKLAHOMA (Group 3)—				
U. S. Motor grades:				
Below 63 octane	.04	.04⅛	.03⅞	.04
63-70 octane	.04¾	.05	.04⅝	.04⅞
60-62 400 grade:				
Below 63 octane	.04	.04⅛	.03⅞	.04⅛
63-70 octane	.04¾	.05	.04⅝	.04⅞
64-66 375	.04⅛	.04¼	.04⅛	.04¼
68-70 360	.04¼	.04⅜	.04¼	.04⅜
NORTH TEXAS—				
U. S. Motor grades:				
Below 63 octane	.04	.04⅛	.03⅞	.04
63-70 octane	.04¾	.05	.04⅝	.04⅞
60-62 400	.04	.04⅛	.04	.04⅛
64-66 375	.04⅛	.04¼	.04⅛	.04¼
NORTH LOUISIANA (Ark., N. La. & Miss. del.)—				
U. S. Motor grades:				
Below 63 octane	.04½		.04½	
63-70 octane	.05⅜		.05⅜	
60-62 400	.04½		.04½	
ARKANSAS (Ark., N. La. & Miss. del.)—				
U. S. Motor grades:				
Below 63 octane	.04½		.04½	
63-70 octane	.05⅜		.05⅜	
CHICAGO (based on Oklahoma Group 3)—				
U. S. Motor grades:				
Below 62 octane	.03⅞	.04	.03¾	.04
63-70 octane	.04¾	.05	.04⅝	.04⅞
60-62 400	.03⅞	.04⅛	.03¾	.04
64-66 375	.04	.04¼	.03⅞	.04⅛
68-70 360	.04¼	.04⅜	.04	.04¼
Aviation fighting grade	.04⅞	.05	.04¾	.05
PENNSYLVANIA (inland refineries)—				
58-60 U. S. Motor:				
Below 60 octane	.04⅞		.04½	
60-64.9	.05¾		.05⅝	
65-70 octane	.06		.06	
68-70 350	.05⅝		.05⅝	
CALIFORNIA (domestic movement)—				
54-58 U. S. Motor	.07	.08	.07	.08
58-60 400	.08	.09	.08	.09
EAST COAST—				
U. S. Motor, below 60 octane:				
*New York	.05¼		.05¼	.05½
Baltimore	.05½		.05¾	
U. S. Motor, 60-64.9 octane:				
*New York (Bayonne)	.05½		.05½	.05¾
Philadelphia	.05¾	.06	.05¾	.06
Boston	.05½	.05¾	.05¾	.06
Baltimore	.05½	.05¾	.05¾	.06
Charleston, S. C.	.05½	.05¾	.05¾	.06
U. S. Motor, 65 and above:				
*New York	.05¾		.05¾	.06
Philadelphia	.06	.06¼	.06	.06¼
Boston	.05¾	.06	.06	.06¼
Baltimore	.05¾	.06	.06	.06¼
Charleston, S. C.	.05¾	.06	.06	.06¼

*All grades of gasoline one-fourth cent less for small barge shipments.

GULF COAST (domestic)—				
U. S. Motor:				
Below 60 octane	.05	.05⅛	.05	.05⅛
60-64.9 octane	.05¼		.05¼	
65 octane and higher	.05¼	.05½	.05¼	.05½

Naphthas

	Mar. 19		Mar. 12	
PENNSYLVANIA (inland refineries)—				
50-52 (blending)	.04¼	.04½	.04	.04¼
52-54 450 (blending)	.04¼	.04½	.04	.04¼
54-56 450 (blending)	.04¼	.04½	.04	.04¼
50-52 450 (blending)	.04¼	.04½	.04	.04¼
CHICAGO (based on Oklahoma Group 3)—				
50-52 450 (blending)	.03¾	.04	.03½	.03¾
Cleaners' naphtha, 56-58 gr., 200 i.b.p., 320 e.p.	.06¾	.07	.06¾	.07
Lacquer diluent, 180 i.b.p., 250 e.p.	.07¾	.08	.07¾	.08
Lacquer diluent, 140 i.b.p., 200 e.p.	.08¾	.09	.08¾	.09
Rubber solvent, 68-70 gr., 100 i.b.p., 300 e.p.	.06¾	.07	.06¾	.07
Stoddard solvent, 300 i.b.p., 410 e.p., over 83° flash	.06¼	.06½	.06¼	.06½
Pet. thinner, 290-300 i.b.p., 410 e.p., over 83° flash	.06¼	.06½	.06¼	.06½
V.M.&P. naphtha, 56-58 gr., 190-200 i.b.p., 330 e.p.	.06¾	.07	.06¾	.07
Petroleum spirits	.05¾	.06	.05¾	.06

Natural Gasolines

	Mar. 19		Mar. 12	
OKLAHOMA (Group 3)—				
Grade 26-70	.02⅛		.02	.02¼
Grade 18-55	.02¾	.02⅞	.02¾	.02⅞
Low vapor pressure grades:				
14 lb. v.p. (max.)	.03⅛	.03¼	.03⅛	.03¼
12 lb. v.p. (max.)	.03¾	.04	.03¾	.04
NORTH TEXAS—				
Grade 26-70	.02	.02¼	.02	.02¼
Grade 18-55	.02⅝	.02¾	.02⅝	.02¾
Low vapor pressure grades:				
14 lb. v.p. (max.)	.03	.03¼	.03	.03¼
12 lb. v.p. (max.)	.03⅝	.03¾	.03⅝	.03¾
NORTH LOUISIANA (Ark., N. La. & Miss. del.)—				
Grade 26-70	.02⅝		.02⅝	
CALIFORNIA—				
75-85 375	.05	.06	.05	.06

Kerosenes

(All kerosenes water white)

	Mar. 19		Mar. 12	
OKLAHOMA (Group 3)—				
41-43	.03½	.03⅝	.03½	.03⅝
42-44	.03⅝	.03¾	.03⅝	.03¾
NORTH TEXAS—				
40-41	.03⅛	.03¼	.03¼	.03⅜
41-43	.03⅜	.03½	.03½	.03⅝
NORTH LOUISIANA (Ark., N. La. & Miss. del.)—				
41-43	.03¾		.03¾	
ARKANSAS (Ark., N. La. & Miss. del.)—				
41-43	.03¾		.03¾	
PENNSYLVANIA (inland refineries)—				
45	.04¾	.04⅞	.04¾	.04⅞
46	.04⅞	.05	.04⅞	.05
47	.05	.05⅛	.05	.05⅛
CHICAGO (based on Oklahoma Group 3)—				
41-43	.03½	.03⅝	.03½	.03⅝
42-44	.03⅝	.03¾	.03⅝	.03¾
CALIFORNIA (Pacific Coast consumption)—				
38-40 high burning test	.04½	.05	.04½	.05
NEW YORK (Bayonne, N. J.)—				
41-43	.05½		.05½	
GULF COAST (domestic)—				
41-43	.04½	.04¾	.04½	.04¾

Petroleum Coke

(Prices per ton f.o.b. refineries in Chicago area)
(Refineries will absorb freight to 80 cents a ton)

	Mar. 19	Mar. 12
Pile run	6.00	6.00
Direct from still	7.00	7.00
Egg, nut, pea	8.50	8.50
Lump	8.50	8.50

Furnace Oils and Tractor Fuels

(Zero cold test under 190° flash and good odor)

	Mar. 19		Mar. 12	
OKLAHOMA (Group 3)—				
32-36 straw	.02⅞	.03	.02⅞	.03
36-38 straw	.03	.03⅛	.03	.03⅛
38-40 straw	.03	.03⅛	.03	.03⅛
38-40 prime white	.03⅛	.03¼	.03⅛	.03¼
NORTH TEXAS—				
38-40 straw	.03⅛	.03¼	.03⅛	.03¼
NORTH LOUISIANA (Ark., N. La. & Miss. del.)—				
36-40 furnace oil	.02⅞	.03	.02⅞	.03
ARKANSAS (Ark., N. La. & Miss. del.)—				
32-36 furnace oil	.02⅞	.03	.02⅞	.03
CHICAGO (based on Oklahoma Group 3)—				
32-36 straw	.02⅞	.03	.02⅞	.03
38-40 straw	.02⅞	.03⅛	.02⅞	.03⅛
38-40 prime white	.03⅛	.03¼	.03	.03¼
NEW YORK (Bayonne, N. J.)—				
No. 1	.05¼		.05½	
No. 2	.04¼		.04½	
No. 4	.04¼		.04½	

Gas Oil, Diesel Oil and Fuel Oil

(Gas oil per gal., Diesel and fuel oils per bbl.)

	Mar. 19		Mar. 12	
OKLAHOMA (Group 3)—				
32-36 gas oil, cracking stock	.02	.02⅛	.02	.02⅛
U.G.I. gas oil	.02⅛	.02¼	.02⅛	.02¼
32-36, zero to 15 gas oil	.02¾	.02⅞	.02¾	.02⅞
28-30, No. 3 burner oil	1.05	1.10	1.05	1.10
26-30, zero to 10 fuel oil	.95	1.00	.95	1.00
24-26 fuel oil	.75	.77½	.75	.77½
20-22 fuel oil	.70	.75	.70	.75
Below 16 fuel oil	.60	.62½	.60	.62½
NORTH TEXAS—				
32-36 gas oil, industrial	.02¼	.02⅜	.02¼	.02⅜
22-26 fuel oil	.65	.67½	.65	.67½
Below 20 fuel oil	.60	.62½	.60	.62½
NORTH LOUISIANA (Ark., N. La. & Miss. del.)—				
30-32 gas oil, zero	.03	.03⅛	.03	.03⅛
14-16 fuel oil	.70	.75	.70	.75
ARKANSAS (Ark., N. La. & Miss. del.)—				
30-32 gas oil, zero	.03	.03⅛	.03	.03⅛
32-36 gas oil	.02⅞	.03	.02⅞	.03
14-16 fuel oil	.65	.70	.65	.70
CHICAGO (based on Oklahoma Group 3)—				
32-36 gas oil, industrial	.02	.02⅛	.02	.02⅛
28-30 zero to 10, fuel oil	1.05	1.10	1.05	1.10
26-28 zero to 10 fuel oil	.95	1.00	.95	1.00
22-26 zero to 10, fuel oil	.82½	.87½	.82½	.87½
18-22 zero to 10, fuel oil	.67½	.72½	.67½	.72½
Below 18 fuel oil	.57½	.62½	.57½	.62½

Note: Fuel oils of more than 40 cold test generally 5 to 15 cents per barrel in all these areas.

PENNSYLVANIA (inland refineries)—				
30-40	.04⅛		.04	.04½
CALIFORNIA—				
Los Angeles:				
30-34 gas oil, per bbl.	1.10	1.26	1.10	1.26
27 plus Diesel	1.10	1.15	1.10	1.15
27 plus Diesel (bunkers)	1.13	1.20	1.13	1.20
12-16 (bunkers at tidewater)	.82½	.85	.82½	.85
10-16 (cargo lots)	.70	.75	.70	.75
12-17 (tank cars)	.62½	.80	.62½	.80
San Joaquin Valley:				
10-18 (tank cars)	.60	.70	.60	.70
San Francisco:				
27 plus Diesel, per bbl.	1.15	1.20	1.15	1.20
27 plus Diesel (bunkers)	1.19		1.19	
10-16 (bunkers)	.90		.90	
GULF COAST—				
28-30 gas oil	.03½	.03⅝	.03½	.03⅝
28-30 Diesel (bunkers)	1.70		1.70	
Bunker C (bulk cargoes)	.85	.90	.85	.90
Bunker C (bunkers)	.95	1.00	.95	1.00
NEW YORK (Bayonne, N. J.)—				
27 plus, gas oil	.05¼		.04½	
28-30 Diesel (lighterage 6½ cents per bbl.)	1.89		1.89	
28-30 Diesel (tank cars)	.04¼		.04½	
*Bunker C (to ocean-going ships in N. Y. harbor)	1.15		1.15	
Industrial fuel (tank cars)	.04		.04	

*Lighterage charge 5 cents per barrel additional.

Neutral Oils

(Vis. at 100° F. except Pennsylvania, and color N.P.A.)

	Mar. 19		Mar. 12	
OKLAHOMA (Group 3)—				
Zero to 10 Cold Test:				
150-3	.10		.10	
180-3	.11¼		.11¼	
180-4	.10¾		.10¾	
200-3	.11¾		.11¾	
200-4	.11¼		.11¼	
240-3	.13¾		.13¾	
240-4	.13¼		.13¼	
280-3	.14¾		.14¾	
280-4	.14		.14	
300-3½	.15¼		.15¼	
400-4	.17¼		.17¼	
100-2 paraffin oil	.05¾		.05¾	
15-20 Cold Test:				
200-3	.10¾		.10¾	
200-4	.10¼		.10¼	
240-3	.12¾		.12¾	
240-4	.12¼		.12¼	
280-3	.13¾		.13¾	
280-4	.13		.13	
GULF COAST—				
Pale Oils:				
200-3	.07	.07½	.07	.07½
300-3	.07½	.08	.07½	.08
500-3½	.08½	.09	.08½	.09
750-3½	.09	.09¼	.09	.09¼
1,200-3½	.09½	.09¾	.09½	.09¾
2,000-4	.09¾	.10	.09¾	.10
Red Oils:				
200-5-6	.07	.07¼	.07	.07¼
300-5-6	.07¼	.07½	.07¼	.07½
500-5-6	.08	.08½	.08	.08½
750	.08½	.09	.08½	.09
1,200-5-6	.09¼	.09½	.09¼	.09½
CALIFORNIA (moving to domestic market)—				
Pale Oils:				
100-2½-3	.12½	.14½	.12½	.14½
200-2½-3	.12½	.14½	.12½	.14½
300-3-3½	.12½	.14½	.12½	.14½
350-3-4	.12½	.14½	.12½	.14½
400-3-4	.12½	.14½	.12½	.14½
450-3-4	.12½	.14½	.12½	.14½
550-3-4	.12½	.14½	.12½	.14½
600-3-4	.12½	.14½	.12½	.14½
Red Oils:				
200-4-5	.12½	.14½	.12½	.14½
300-5-6	.12½	.14½	.12½	.14½
350-5-6	.12½	.14½	.12½	.14½

400-5-6	.12½	.14½	.12½	.14½
450-5-6	.12½	.14½	.12½	.14½
500-5-6	.12½	.14½	.12½	.14½
600-5-6½	.12½	.14½	.12½	.14½
700-6½ plus	.12½	.14½	.12½	.14½
750-6½ plus	.12½	.14½	.12½	.14½
900-6½ plus	.12½	.14½	.12½	.14½
PENNSYLVANIA—				
150 vis. at 70° F., 3 color, 400-405 flash:				
Zero pour test	.23½	.24	.23½	.24
10 pour test	.22½	.23	.22½	.23
15 pour test	.22	.22½	.22	.22½
25 pour test	.21	.21½	.21	.21½
180 vis. at 70° F., 3 color:				
25 pour test	.23½	.24	.23½	.24
200 vis. at 70° F., 3 color:				
Zero pour test	.28½	.29	.28½	.29
10 pour test	.27½	.28	.27½	.28
15 pour test	.27	.27½	.27	.27½
25 pour test	.26	.26½	.26	.26½

Bright and Steam Refined Stocks

OKLAHOMA (Group 3)—	Mar. 19		Mar. 12	
Bright stocks:				
190-200 D	.17		.17	
150-160 O, 0-10	.14		.14	
150-160 D, 10-25	.13½		.13½	
150-160 24-40	.13		.13	
150-160 E	.13		.13	
Steam refined:				
630 light green (treated)	.07½	.08	.07½	.08
600 light green (untreated)	.06	.08	.06	.08
600 dark green (untreated)	.04½	.07	.04½	.07
PENNSYLVANIA—				
Bright Stocks (Pennsylvania grade, No. 8 color, 145-50 at 210; 540-550 flash):				
10 pour test	.18½	.19	.18½	.19
15 pour test	.17½	.18	.17½	.18
20 pour test	.16½	.17	.16½	.17
25 pour test	.15½	.16	.15½	.16
Steam refined:				
600	.07½	.08	.08	.09
650	.10	.10½	.10	.11
600 Pennsylvania flash	.11½	.12	.11	.12
630 flash	.16	.16½	.16	.17
600 Warren E filtered	.12	.12½	.12	.13

Wax and Petrolatum

(Prices per pound)

OKLAHOMA (Group 3)—	Mar. 19		Mar. 12	
124-126 white crude scale	.02	.02¼	.02½	.02¾
PENNSYLVANIA (inland refineries)—				
122-124	.0210	.0215	.0225	
124-126	.0215	.0220	.0230	
NEW YORK—				
Wax (a.m.p.) in bags fully refined:				
Refined grades:				
123-135	.0430			
125-127	.0450		.0445	.0470
128-130	.0475			
130-132	.0490		.05	.0510
133-135	.0550		.0545	.0570
135-137	.0575		.0570	.0595
Crude scale:				
124-126 w.s.	.0210	.0225		
124-126 y.s.	.0200	.0215		
Petrolatum in barrels in carload lots:				
Dark green	.01⅞		.01⅞	
Amber	.02⅞	.03	.02⅞	.03
Extra amber	.03	.03⅛	.03	.03⅛
Lily white	.06⅝	.06¾	.06⅝	.06¾
Snow white	.07¾	.07⅞	.07⅞	.07⅞
Cream	.05⅝	.05¾	.05⅝	.05¾
CHICAGO (based on Oklahoma Group 3)—				
122-124 wax	.0440	.0450	.0440	.0450
125-127 wax	.0465	.0475	.0465	.0475
127-129 wax	.0480	.0490	.0480	.0490
130-132 wax	.0540	.0550	.0540	.0550
132-134 wax	.0565	.0575	.0565	.0575

*Cents per pound on carload orders in burlap bags of 225 lbs. approx. Add 3° F. a.m.p.

Export Prices

GASOLINE

GULF COAST—	Mar. 19	Mar. 12
U. S. Motor	.04¼	.04¼
60-62 400	.04⅝	.04⅝
61-63 390	.04½	.04½
64-66 375	.04⅝	.04¾ .04⅝ .04¾
LOS ANGELES, CALIF.—		
U. S. Motor grades:		
53-55 octane	.04	.04¼ .04 .04¼
55-65 octane	.04¼	.04¼
65-67 octane	.04¼	.04½ .04¼ .04½
67-69 octane	.04½	.04⅝ .04½ .04⅝
Above 69 octane	.04⅝	.05¼ .04⅝ .05¼
58-60 400 endpoint	.04½	.05 .04½ .05

KEROSENE

GULF COAST—				
41-43 prime white	.04⅜	.04½	.04½	.04⅝
41-43 water white	.04½	.04⅝	.04⅝	.04¾
44 water white	.04¾	.04⅞	.04⅞	.05
LOS ANGELES, CALIF.—				
41-43 water white	.04¼	.04¾	.04¼	.04¾

LUBRICANTS

NEW YORK (f.a.s. in bbls.)—				
Cylinder Stocks:				
600 Warren E	.18½	.19	.18½	.19
600 S.R. unfiltered	.14	.14½	.14	.14½
650 S.R. unfiltered	.16	.16½	.16	.16½
600 flash S.R.	.17	.17½	.17	.17½
630 flash S.R.	.20½	.21	.20½	.21
Bright Stocks:				
8 color	.22	.23	.22	.23
6½ plus colors in dilution	.20½	.21	.20½	.21

NEUTRAL OILS

200-3 color	.32	.34	.32	.34
150-3 color	.27	.28	.27	.28
NEW YORK (prices per pound):				
123-135 a.m.p.	.0415		.0435	.0455
125-127 a.m.p.	.0425		.0440	.0465
128-130 a.m.p.	.0450		.04¾	.0490
130-132 a.m.p.	.0425		.0495	.0505
133-135 a.m.p.	.0525		.0540	.0565
135-137 a.m.p.	.0575		.0565	.0590
Crude scale:				
124-126 w.s.	.0205	.0220		
124-126 y.s.	.0200	.0210		

Crude Oil Gravity Table

Gravity—	Oklahoma and Kansas 1	North Texas, Central Texas and East Central Texas 2	North Louisiana and Arkansas 3	Gray County, Texas 4	Carson, Hutchinson and Moore Counties, Texas 5	Conroe, Texas 6	Salt Creek, Wyo. 7	Gulf Coast, Texas and Louisiana 8	Gulf Coast, Texas and Louisiana 9	Cotton Valley, Louisiana 10
Below 20	....	....	....	....	....	....	....	$.82	$.82	....
20-20.9	....	....	....	....	....	....	....	.84	.84	....
21-21.9	....	....	....	....	....	....	....	.86	.86	....
22-22.9	....	....	....	....	....	....	....	.88	.88	....
23-23.9	....	....	....	....	....	....	....	.90	.90	....
24-24.9	....	....	....	....	....	....	....	.92	.92	....
Below 25	*$.76	....	....	....	....	....	....	....	....	$.70
25-25.9	*.78	....	....	....	....	....	....	.94	.94	.72
26-26.9	*.80	....	....	....	....	....	....	.96	.96	.74
27-27.9	*.82	....	....	....	....	....	....	.98	.98	.76
28-28.9	*.84	....	....	....	....	....	....	1.00	1.00	.78
Below 29	.84	$.79	$.79	....	....	....	$.84	....	....	....
29-29.9	.86	.81	.81	....	....	....	.86	1.02	1.02	.80
30-30.9	.88	.83	.83	....	....	....	.88	1.04	1.04	.82
31-31.9	.90	.85	.85	....	....	....	.90	1.06	1.05	.84
32-32.9	.92	.87	.87	....	....	....	.92	1.08	1.06	.86
33-33.9	.94	.89	.89	....	....	....	.94	1.10	1.07	.88
34-34.9	.96	.91	.91	....	....	....	.96	1.12	1.08	.90
Below 35	....	....	....	$.79	$.69	....	....	....	....	....
35-35.9	.98	.93	.93	.81	.71	$1.00	.98	1.12	1.09	.92
36-36.9	1.00	.95	.95	.83	.73	1.11	1.00	1.12	1.10	.94
37-37.9	1.02	.97	.97	.85	.75	1.13	1.02	1.12	1.11	.96
38-38.9	1.04	.99	.99	.87	.77	1.15	1.04	1.12	1.12	.98
39-39.9	1.06	1.01	1.01	.89	.79	1.17	1.06	1.12	1.13	1.00
40 and over	1.08	1.03	1.03	.91	.81	1.19	1.08	1.12	1.14	1.02

Effective December 3, 1934, Panhandle Refining Co., purchasing oil in North Texas, posted below 29 degrees, 68 cents; 29-29.9 degrees, 70 cents, with 2 cents added for each additional degree up to 40 and over, at 92 cents.

*The following companies purchasing crude oil in Kansas or Oklahoma, or both, begin their price schedule: Below 25°, 76 cents; 25-25.9°, 78 cents, with 2 cents added for each degree upward to 40 and over at $1.08; Carter Oil Co., Magnolia Petroleum Co., Pure Oil Co., Rock Island Refining Co., Shell Petroleum Corp., Sinclair Prairie Oil Marketing Co., Skelly Oil Co., and Wilcox Oil & Gas Co. All others begin their schedules at below 29°, 84 cents, excepting Phillex Oil Co., which begins with below 31° at 88 cents.

Column 1—Effective September 29, 1933, Texas Co. of Oklahoma; Stanolind Crude Oil Purchasing Co. in Kansas and Oklahoma; Anderson & Prichard, Inc., in Oklahoma; Bell Oil & Gas Co. in Oklahoma; Carter Oil Co. in Oklahoma and Kansas; Deep Rock Oil Co. in Oklahoma; Derby Oil Co. in Kansas; Globe Refining Co. in Oklahoma; Golden Rule Refining Co. in Kansas; Gypsy Oil Co. in Oklahoma and Kansas; Kanotex Refining Co. in Kansas; Magnolia Petroleum Co. in Oklahoma; Mid-Continent Petroleum Corp. in Oklahoma; National Refining Co. in Kansas and Oklahoma; Shell Petroleum Corp. in Kansas and Oklahoma; Sinclair Prairie Oil Marketing Co. in Kansas and Oklahoma; Texas Co. in Oklahoma; Tide Water Oil Co. in Oklahoma; Vickers Refining Co. in Kansas; Continental Oil Co. in Kansas and Oklahoma; Empire Pipe Line Co. in Oklahoma and Kansas; Phillex Oil Co. in Kansas and Oklahoma; Pure Oil Co. in Oklahoma; Skelly Oil Co. in Kansas. Effective September 29, by White Eagle Oil Corp. in Kansas; October 1, by Barnsdall Refineries, Inc., in Oklahoma.

Column 2—Effective September 29, 1933, by Texas Co., Stanolind Crude Oil Purchasing Co., Humble Oil & Refining Co., Sinclair Prairie Oil Marketing Co., Gulf Pipe Line Co., Magnolia Petroleum Co., Bell Oil & Gas Co., Continental Oil Co. Effective January 14, 1935, in the Van Pool, Van Zandt County, Pure Oil Co. posted below 29°, 79 cents, with 2 cents added for each degree up to 40 and over at $1.03.

Column 3—Effective September 29, 1933, by Texas Co., Magnolia Petroleum Co., Gulf Refining Co. Effective December 22, Stanolind Oil & Gas Co. in Pine Island, Louisiana, and Marion County, Texas, posted below 29°, 79 cents, with 2 cents added for each degree up to 40 and over at $1.03. Effective March 17, 1934, by Standard Oil Co. of Louisiana and Louisiana Oil Refining Co. Starting with below 25°, 71 cents, adding 2 cents for each degree upward to 40 and over at $1.03.

Column 4—Effective September 29, 1933, by Texas Co., Humble Oil & Refining Co., Magnolia Petroleum Co., Sinclair Prairie Oil Marketing Co., and H. F. Wilcox Oil & Gas Co. On same day, Phillex Oil Co. posted below 31°, 71 cents, with 2 cents added for each degree up to 40 and over at 91 cents. Effective June 1, 1934, Texas Co. (see note above).

Column 5—Effective September 29, 1933, by Texas Co., Humble Oil & Refining Co., Gulf Pipe Line Co., Magnolia Petroleum Co., Wilcox Oil & Gas Co., Continental Oil Co. On same day, Phillex Oil Co. posted below 31°, 61 cents, with 2 cents added for each degree upward to 40 and over at $1 cents. Effective June 1, 1934, Texas Co. (see note above).

Column 6—Effective September 29, 1933, by Humble Oil & Refining Co. and Tide Water Oil Co., and on September 30 by Texas Co., which on September 29 had posted a schedule of $1.07 to $1.12 with a 1-cent spread on each degree.

Column 7—Effective September 29, 1933, by Stanolind Oil & Gas Co.

Column 8—Effective September 29, 1933, by Humble Oil & Refining Co., Gulf Pipe Line Co., Shell Petroleum Corp., Pure Oil Co., Sinclair Prairie Oil Marketing Co. On October 2, Magnolia Petroleum Co. posted Lockport, Louisiana, 20-20.9°, 84 cents, with 2 cents added for each degree upward to 34 and over at $1.12; and in Cameron Meadows and Iowa, Louisiana, below 20°, 72 cents, with 2 cents added for each degree up to 34 and over at $1.02. These prices were 2 cents higher on each degree than Magnolia prices posted on September 29. Effective September 29, Shell Petroleum Corp. posted in Iowa, Louisiana, district: Below 20°, 70 cents, with 2 cents added for each degree upward to 34° and over at $1; and in Black Bayou and White Castle, Louisiana: Below 20°, 80 cents, with 2 cents added for each degree upward to 34° and over at $1.10.

Column 9—Effective September 30, 1933, Texas Co. (On September 29 Texas Co. has posted a schedule of 2 cents on each degree, but changed it on September 30.)

Column 10—Effective September 29, 1933, by Louisiana Oil Refining Co.

(California Crude Oil Prices on Page 36)

Crude Oil Prices

Oklahoma, Kansas, North Central and East Central Texas

East Texas $1.00
Corsicana (heavy) (June 17, 1933)* ..... .80
Other fields ..... (See gravity table)

Note—In East Texas, effective September 29, 1933, by Texas Co., Sanolind Crude Oil Purchasing Co., Humble Oil & Refining Co., Shell Petroleum Corp., Gulf Pipe Line Co., Tide Water Oil Co., Sinclair Prairie Oil Marketing Co., Magnolia Petroleum Co., Sun Oil Co., Panola Pipe Line Co., Empire Oil & Refining Co., and Atlas Pipe Line Co. posted 60 cents per barrel in East Texas, but on November 3 resumed its posted price of $1 per barrel, making it retroactive to October 22.

*Magnolia Petroleum Co.

West Texas

Crane, Upton, Crockett, Howard, Glasscock, Mitchell (Sept. 29, 1933) ..... $.70
Ector, Winkler and Pecos Counties and Lea County, New Mexico (Sept. 29, 1933) ..... .75
Pecos County, Yates shallow Pool (Sept. 29, 1933)* ..... .85
Jones and Fisher Counties*. See gravity table

Note—Effective September 29, 1933, by Humble Oil & Refining Co., Texas Co., Gulf Pipe Line Co., Shell Petroleum Corp., Magnolia Petroleum Co., and by Stanolind Oil & Gas Co. in Winkler County, Texas.

*Shell Petroleum Corp.

Gulf Coast

Grade A and Grade B specifications discontinued by leading buyers.
..... (See gravity table)
Tomball (see note)* $1.15
Livingston (Sept. 29, 1933)† 1.00
Cleveland (Jan. 11, 1934) 1.00
Greta (Sept. 29, 1933) ..... .85
Refugio, light ..... (See gravity table)
Refugio, heavy (Sept. 29, 1933)‡ ..... .85
Markham and High Island .....
.....(See Gulf Coast gravity table)
Conroe .....(See Conroe gravity table)
Bosco, La. (Jan. 18, 1935)§ ..... $.93

Note—Tomball, effective September 29, by Humble Oil & Refining Co. and October 2 by Magnolia Petroleum Co., and November 10 by Stanolind Crude Oil Purchasing Co

*Greta posted by Texas Co. †Shell Petroleum Corp. ‡Refugio heavy by Humble Oil & Refining Co. Cleveland (Liberty County) posted by Magnolia Petroleum Co. §Bosco posted by Pure Oil Co.

South Central and Southwest Texas

(See note below table)

Darst Creek ..... $.87
Mirando ..... .80
Luling (Sept. 29, 1933) ..... .75
Pettus 1.05
Salt Flat ..... .87
Lytton Springs (Sept. 29, 1933) ..... .95
Duval County (Sept. 29, 1933) ..... .80
Saxet ..... .85

Note—Effective on September 29 by Humble Oil & Refining Co. in Darst Creek, Mirando, Pettus, Salt Flat and Saxet. Effective September 29 in Darst Creek by Gulf Pipe Line Co. and Texas Co. Effective October 2 by Magnolia Petroleum Co. Effective in Pettus and Salt Flat on September 29 by Humble Oil & Refining Co. and Gulf Pipe Line Co. Luling and Lytton Springs by Magnolia Petroleum Co. Duval County by Texas Co. Saxet, effective September 29, by

(Continued on Page 36)

TANK WAGON MARKETS

Quotations for gasoline and kerosene in United States, as furnished by the larger marketing concerns, include taxes

March 19, 1935

Taxes

The gasoline quotations given in the following tables include the 1-cent Federal tax, as well as state, county and city taxes. The gasoline quoted is the regular or standard grade. In most marketing areas a third grade and a premium grade are also available.

Discounts

Under the standard form of commercial consumer contract which went into effect March 1, 1934, save in California, Oregon, Washington, Arizona and Nevada, a discount of 1 cent a gallon off tank wagon or 3 cents a gallon off retail prices is permitted for purchases running between 4,000 and 10,000 gallons a month, or 4 cents a gallon off retail prices for purchase in lots of more than 10,000 gallons a month. The minimum delivery is 25 gallons.

Rocky Mountain District

CONTINENTAL OIL CO.

	Gasoline			Kero-
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Denver, Colo.	18.0	20.0	5.0	13.0
Pueblo	17.0	19.0	5.0	13.0
Grand Junction	18.5	20.5	5.0	15.0
Casper, Wyo.	18.0	20.0	5.0	11.5
Cheyenne	18.0	20.0	5.0	13.0
Butte, Mont.	21.0	23.0	5.0	17.5
Billings	22.0	24.0	6.0	16.5
Helena	23.0	25.0	6.0	17.5
Great Falls	21.5	23.5	6.0	17.5
Salt Lake Utah	21.0	23.0	5.0	16.0
Boise, Idaho	22.5	24.5	6.0	18.0
Twin Falls	22.5	24.5	6.0	18.0
Albu'que, N. M.	18.0	20.0	*6.5	13.0

*One-half cent city tax.

Effective March 1, 1934, discount to dealers with or without contract throughout Continental territory: Undivided dealer discount off service station price, 4 cents; divided dealer accounts, 3½ cents.

Standard Oil Co. (Indiana)

	Gasoline			Kero-
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Chicago	14.3	16.3	4.0	9.0
Decatur, Ill.	14.2	16.2	4.0	9.4
E. St. Louis	13.9	15.9	4.0	9.1
Joliet	14.3	15.8	4.0	9.5
Peoria	14.2	14.2	4.0	9.4
Quincy	14.1	16.1	4.0	9.3
Davenport, Ia.	14.3	16.2	4.0	9.4
Des Moines	14.1	16.1	4.0	9.3
Mason City	14.4	16.4	4.0	9.6
Sioux City	14.3	16.3	4.0	9.5
Duluth, Minn.	15.0	17.0	4.0	10.2
Mankato	14.7	16.7	4.0	9.5
Minneapolis	14.7	16.7	4.0	9.9
LaCrosse, Wis.	15.7	17.7	4.0	9.9
Green Bay	15.9	17.9	5.0	10.1
Milwaukee	15.8	17.8	5.0	9.7
Madison	16.0	18.0	5.0	9.9
Detroit, Mich.	15.0	17.0	4.0	9.0
Grand Rapids	14.9	16.9	4.0	10.8
Saginaw	15.2	17.2	4.0	11.1
Evansville, Ind.	16.0	17.8	5.0	10.0
Indianapolis	16.1	18.1	5.0	10.1
South Bend	16.4	18.4	5.0	10.4
Fargo, N. Dak.	15.7	17.7	4.0	10.9
Huron, S. Dak.	16.2	18.2	5.0	10.4
Sioux Falls	15.6	17.6	5.0	9.8
Kans. C., Mo.*	13.5	15.6	4.0	7.5
Springfield	13.3	14.5	4.0	7.0
St. Louis	13.9	15.9	3.5	7.5
St. Joseph*	13.6	15.6	4.0	8.8
Wichita, Kans.	13.2	15.2	4.0	6.0
Bartlesville, Ok.	16.3	18.0	5.0	8.5

*State tax 2 cents, 1-cent city tax and 1-cent federal tax.

Discounts to dealers: Undivided accounts, 3½ cents on premium and regular and 2½ cents on third grade off service station prices; divided accounts one-half cent less than undivided. Where prices are more than 1 cent below normal, the discounts are one-half cent less than above.

Stanolex Furnace Oil in Chicago

Effective Feb. 16, 1935, f.o.b. Chicago tank wagon prices: Range oil, less than 80 gallons, 8¼ cents; 80-149 gallons, 7½ cents; 150 gallons and more, 7 cents. No. 1 (36-40 R. stw. zero), less than 100 gallons, 8½ cents; 100-149 gallons, 7½ cents; 150 gallons or more, 7 cents; No. 2 (30-34, stw. zero), less than 150 gallons, 8 cents; No. 3 (22-26, zero), less than 150 gallons, 7 cents; No. 4 (12-16 zero), less than 400 gallons, 7 cents; viscosity of No. 4, 85 at 100° F.; No. 5, less than 400 gallons, 6¾ cents. For deliveries of more than stated quantities of Nos. 2, 3, 4 and 5, deduct 1 cent.

(Note: Range oil not quoted by Standard; quotation on this product by Burning Oil Distributors Association.)

Southern District

STANDARD OIL CO. (KENTUCKY)

	Gasoline			Kero-
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Atlanta, Ga.	19.0	21.0	7.0	12.0
Augusta	19.0	21.0	7.0	15.0
Macon	19.0	21.0	7.0	15.0
Savannah	17.5	19.5	7.0	14.0
Birm'ham, Ala.	19.5	21.5	8.0	12.0
Mobile	18.5	20.5	8.0	11.0
Montgomery	20.5	22.5	8.0	15.5
Jackson, Miss.	18.5	20.5	7.0	13.0
Vicksburg	18.0	19.5	7.0	14.5
Jack'ville, Fla.	18.5	20.5	8.0	11.5
Miami	18.5	20.5	8.0	13.5
Pensacola	19.0	21.0	8.0	13.5
Tampa	18.5	20.5	8.0	12.5
Lexington, Ky.	17.0	19.0	6.0	11.5
Covington	14.5	15.5	6.0	12.5
Louisville	16.5	18.0	6.0	12.0
Paducah	16.5	18.5	6.0	11.0

In addition to the state tax of 4 cents on gasoline, Montgomery has city and county tax of 2 cents on gasoline and one-half cent on kerosene. Kerosene prices in Georgia and Mississippi include 1 cent state tax; in Alabama, an inspection fee of one-half cent on kerosene and one-fortieth cent on gasoline; in Florida an inspection fee of one-eighth cent on kerosene and gasoline. To Pensacola, Mobile and Birmingham state taxes on gasoline add 1 cent city tax.

Southwestern District

MAGNOLIA PETROLEUM CO.

	Gasoline			Kero-
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Dallas, Tex.	14.0	16.0	5.0	8.0
Fort Worth	14.0	16.0	5.0	8.0
Houston	15.0	17.0	5.0	8.0
San Antonio	13.0	15.0	6.0	8.0
El Paso	16.0	18.0	5.0	10.0
Muskogee, Ok.	16.0	18.0	5.0	6.0
Okla. City	16.0	18.0	5.0	7.5
Tulsa	16.0	18.0	5.0	7.5
Ft. Smith, Ark.	14.1	16.5	5.0	8.0
Little Rock	16.6	19.0	7.5	9.0
Texarkana	14.0	16.0	5.0	8.0

Atlantic Coast District

STANDARD OIL CO. OF NEW JERSEY

	Gasoline			Kero-
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Atl'tic City, N.J.	12.9	16.4	4.0	9.0
Newark	12.2	15.7	4.0	8.5
Annapolis, Md.	14.5	18.0	5.0	10.0
Baltimore	14.0	17.5	5.0	8.5
Cumberland	15.0	18.5	5.0	12.7
Wash'g'n, D. C.	12.0	15.5	3.0	9.5
Danville, Va.	16.5	20.0	6.0	12.9
Norfolk	15.0	18.5	6.0	11.3
Petersburg	15.5	19.0	6.0	11.4
Richmond	15.5	19.0	6.0	11.7
Roanoke	16.5	20.0	6.0	12.9
Charls'n, W.Va.	15.0	18.5	5.0	12.6
Parkersburg	14.0	17.5	5.0	11.2
Wheeling	14.0	17.5	5.0	12.2
Charlotte, N. C.	17.4	20.9	7.0	13.5
Hickory	17.5	21.0	7.0	13.7
Mt. Airy	17.5	21.0	7.0	13.8
Raleigh	17.2	20.7	7.0	13.3
Salisbury	17.5	21.0	7.0	13.6
Charleston, S.C.	15.2	18.7	7.0	11.3
Columbia	17.0	20.5	7.0	13.2
Spartanburg	15.5	18.0	7.0	13.5

Effective October 23, tank wagon gasoline refers to dealer instead of retail prices.

Price basis to dealers: Undivided dealers at regular price less one-half cent. Discount for kerosene, 1 cent off tank wagon price for 25 gallons or more under contract (contract not necessary in Baltimore) except in New Jersey, where no discount is given.

Nebraska

STANDARD OIL CO. OF NEBRASKA

	Gasoline			Kero-
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Omaha	16.6	18.6	5.0	10.0
McCook	17.3	19.3	5.0	10.7
Norfolk	17.0	19.0	5.0	10.4
North Platte	17.4	19.4	5.0	10.0
Scottsbluff	18.1	20.1	5.0	11.5

Note: Discounts to dealers; where service station gasoline prices are (maximum overall, including rent) as follows: Reliance, 2½ cents; Standard Red Crown, 3½ cents; Red Crown Ethyl, 3½ cents.

Where service station gasoline prices are below normal, resellers' allowances are reduced one-half of the amount below normal, down to the following (minimum overall, including rent): Reliance, 2 cents; Standard Red Corwn, 3 cents; Red Crown Ethyl, 3 cents. Discounts to consumers for tank wagon deliveries covered only by Standard Commercial Consumers Contract, effective Jan. 1, 1935.

Central South District

STANDARD OIL CO. OF LOUISIANA

	Gasoline			Kero-
	Tank wagon	Service station	Incl'ds tax of	tank wagon
N. Orleans, La.	16.0	19.5	23.0	12.0
Baton Rouge	15.2	18.7	†7.0	12.0
Alexandria	16.1	19.6	†*8.0	10.0
Lafayette	16.3	19.8	‡*8.0	12.0
Lake Charles	16.2	19.7	†*8.0	12.0
Shreveport	14.0	17.5	†7.0	12.0
Knoxville, Tenn.	18.7	22.2	8.0	13.5
Memphis	17.0	20.5	8.0	10.5
Chattanooga	18.5	22.0	8.0	11.0
Nashville	18.0	21.5	8.0	13.0
Bristol	17.0	20.5	8.0	14.0

*Includes city tax of 1 cent.

‡Includes 2-cent parish tax. †Includes 1-cent parish tax.

Effective October 23, tank wagon gasoline refers to dealer instead of retail prices.

Price basis to dealers: Undivided dealers at dealer price less one-half cent.

Louisiana kerosene prices include 1-cent state tax.

Pacific Coast Territory

STANDARD OIL CO. OF CALIFORNIA*

	Gasoline			Kero-
	Tank wagon†	Posted retail	Incl'ds tax of	tank wagon
San Francisco	16.5	18.5	4.0	12.5
Los Angeles	15.5	17.5	4.0	12.5
Fresno, Calif.	17.0	19.0	4.0	14.0
Proenix, Ariz.	20.0	22.0	6.0	‡16.0
Reno, Nev.	19.0	21.0	5.0	15.5
Portland, Ore.	19.0	21.0	6.0	13.5
Seattle, Wash.	19.0	21.0	6.0	13.5
Tacoma	19.0	21.0	6.0	13.5
Spokane	22.0	24.0	6.0	18.0

*Retail prices posted by Standard Stations, Inc., a subsidiary.

†Prices are at company's plant or depots as company does not operate stations. A 4-cent per gallon discount is given dealers and customers taking tank wagon lots except in Phoenix where the discount is 1 cent.

‡Includes 5-cent state tax.

Pennsylvania, Delaware and Part of New England

ATLANTIC REFINING CO.

	Gasoline			Kero-
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Phil'delphia, Pa.	14.0	16.0	4.0	9.0
Pittsburgh	15.0	17.0	4.0	10.0
Allentown	14.5	16.5	4.0	10.0
Erie	15.0	17.0	4.0	9.0
Scranton	15.0	17.0	4.0	10.0
Altoona	15.0	17.0	4.0	10.0
Dover, Del.	14.5	16.5	4.0	10.0
Wilmington	14.5	16.5	4.0	9.0
Springf'd, Mass.	13.0	16.5	4.0	8.5
Worcester	13.0	16.5	4.0	9.0
Hartford, Conn.	12.0	15.5	3.0	8.0
New Haven	12.0	15.5	3.0	8.0
Providence, R.I.	11.5	14.0	3.0	7.5

Note—Tank wagon prices are those applicable to consumers purchasing lots of 100 or more gallons in one delivery.

Canada*

Imperial 3-Star Gasoline

IMPERIAL OIL, LTD.

	Gasoline			Kero-
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Hamilton, Ont.	†22.0	25.0	6.0	17.5
Toronto, Ont.	†22.0	25.0	6.0	17.5
Brandon, Man.	30.3	33.3	7.0	21.8
Winnipeg, Man.	28.7	31.7	7.0	20.2
Regina, Sask.	29.0	32.0	6.0	21.5
Saskatoon, Sask.	31.8	34.8	6.0	24.3
Edmonton, Alta.	31.2	34.2	6.0	23.7
Calgary, Alta.	28.5	31.5	6.0	21.0
Vancouver, B.C.	27.0	30.0	7.0	24.0
Montreal, Que.	24.0	27.0	6.0	17.0
St. John, N.B.	26.0	30.0	8.0	19.5
Halifax, N. S.	26.0	30.0	8.0	19.5

*Imperial gallon used in Canada. †Governed by service station price.

Maritime provinces, all dealers 4 cents off service station price. All other provinces open dealers 3 cents per gallon off service station price (except Toronto and Hamilton cities which are—open dealers 3½ cents off service station price) 1 cent additional to 100 per cent accounts.

Naphtha

STANDARD OIL CO. (INDIANA)

	Tank wagon*
Oleum spirits	15.7
V.M.&P. naphtha	16.0
Cleaners' naphtha	15.0
Stanisol	15.0

*Prices include 3-cent Illinois tax, but not 1-cent federal tax nor 2 per cent retail occupational tax.

Prices f.o.b. Chicago, March 12, 1935. Each of above prices subject to discount of 1 cent per gallon for 150-gallon lots if covered by contracts.

New York and New England

SOCONY-VACUUM CO., INC.

	Gasoline			Kero-
	Posted dealer	Service station	Incl'ds tax of	tank wagon
Albany, N. Y.	12.75	16.0	4.0	9.0
Met. New York	11.75	14.5	4.0	8.0
Br'klyn, Queens	11.5	14.0	4.0	8.0
Buffalo	9.5	12.0	4.0	8.0
Rochester	12.5	15.0	4.0	8.5
Syracuse	12.5	15.0	4.0	8.75
Boston, Mass.	12.5	16.0	4.0	8.0
Portland, Me.	14.5	18.0	5.0	8.75
Manch't'r, N.H.	14.5	18.0	5.0	9.0
Burlington, Vt.	16.0	19.5	5.0	9.5

Ohio

STANDARD OIL CO. OF OHIO

	Gasoline			Kero-
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Ohio points	15.5	17.5	5.0	*13.5

*Includes state tax of 1 cent, effective July 22.

Retail Price Changes

Regular-Grade Gasoline and Kerosene

Atlantic Refining Co., March 9, reduced tank wagon kerosene one-half cent in Providence. March 12, reduced tank wagon kerosene one-half cent in Hartford.

Standard Oil Co. of New Jersey, March 5, reduced tank wagon and station gasoline 1 cent in Wheeling. March 11, reduced tank wagon kerosene 1 cent in Newark. March 11, reduced tank wagon and station gasoline one-half cent in Parkersburg.

Standard Oil Co. of Louisiana, March 7, advanced tank wagon gasoline 2.5 cents and station gasoline 3.5 cents in Shreveport.

Socony-Vacuum Oil Co., Inc., March 8 reduced tank wagon kerosene 75 cents in Metropolitan New York and one-half cent in Boston. March 4, advanced tank wagon kerosene one-half cent in Burlington.

Magnolia Petroleum Co., March 5, advanced tank wagon and station gasoline 1 cent in Dallas and Fort Worth. March 6, advanced tank wagon and station gasoline 1 cent in Houston. March 8, advanced tank wagon kerosene 1 cent in Dallas, Fort Worth, Houston, San Antonio and Texarkana.

March 13, reduced tank wagon and station gasoline 3 cents in San Antonio. March 14, reduced tank wagon kerosene 1.5 cents in Muskogee.

Continental Oil Co., March 13, advanced tank wagon and station gasoline 2 cents in Salt Lake City; March. 15, advanced them 2 cents further.

Gasoline Is Firmer in Group 3 Market

(Continued from Page 26)

market subside, the descent came earlier this time than it did a year ago.

The lubricant group was reported to be standing up well. Neutrals and bright stocks were in satisfactory position and there was no price recession in steam-refined stocks, notwithstanding the fact that these latter have been headed downward in the East and the Oklahoma market takes its price pattern as a rule from Pennsylvania.

DOCTOR DORSEY HURT

NEW YORK, Mar. 18.—Dr. George Edwin Dorsey, chief geologist of the Socony-Vacuum Oil Co., was seriously injured when he slipped and fell from a French window of his second floor apartment. He was removed to a hospital where his condition continues critical.

CHARLES LUKER DIES

PETROLIA, Ontario, Mar. 18.—Charles Luker, for some years on the Canadian Oil Companies' refinery staff here, died recently, aged 54.

Analysis of Replies to Cole Questionnaire

(Continued from Page 15)

tions with an average value of $700 to $542 for a company owning three, each having an average value of $11,375.

The largest quantity of motor fuel marketed by any one company through stations owned and operated by it was 422,774,000 gallons during the year 1930. The highest quantity marketed by any one of the nonintegrated companies was 16,000,000 gallons during the same year. During 1933, five of the larger companies sold in excess of 100,000,000 gallons through stations owned and operated by them. The quantity varied by companies from 136,000,000 to 361,000,000 gallons.

The state having the greatest number of large companies' service stations was California where on July 1, 1934, 2,041 were reported. Ohio and New York rank second and third with 1,926 and 1,614 respectively. The average station sales for all states during the years 1932-33 was 85,000 gallons. The District of Columbia shows the highest sales per station during all years. In 1933 the average was 177,657 gallons. The only region where sales in excess of 100,000 gallons per station were reported was the New England and North Atlantic group. The lowest unit sales of any region was shown in the Rocky Mountains. The average of the South Atlantic and Southern States was 65,711 gallons in 1933.

The stations reported by the small companies were located in 21 states. The data is not at all conclusive. In several states only two or three stations are shown and in others information was not reported for all periods. Ohio shows the largest number of any state. California, which ranged first in the report of the large companies, showed 31 on January 1, 1934. The annual sales per station in the small company group in the States of Alabama, Tennessee, Arkansas, and Mississippi, are shown to be very much less than those of the larger companies.

The trend for the country as a whole during the past two years has been away from company owned and operated stations. The number owned by the company but leased to others increased each year since 1930 with the exception of 1933; during which a small decline is noted, no doubt, caused by the depression. Since January 1, 1933 the number shown as owned by the companies but operated by others increased from 8,009 to 10,574. On the other hand, the number reported as company owned and operated declined from 25,429 to 24,470.

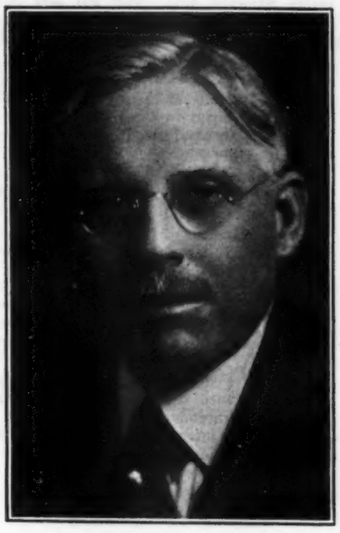
The number of stations supplied on 100 per cent account basis, as reported by the large companies, increased from 138,242 on January 1, 1930 to 180,047 on July 1, 1934. From these figures have been omitted the reports of four companies who were unable, from their records, to supply the information for the entire period. The same four companies showed a combined total of 2,536 stations owned and operated as of July 1, 1934, or 10.67 per cent of stations within this classification. If it were assumed the companies unable to furnish information on the number of stations supplied on a 100 per cent basis maintain such accounts in approximately the same ratio as company owned and operated stations then this figure for large company stations owned or operated on a 100 per cent account basis as of July 1, 1934 would be 201,598.

Ratio of Motor Fuel Sales to Lubricating Oil Sales

Companies reported the quantities of lubricating oil and motor fuel sold through owned and operated stations. From 1930 to 1933 the sales of lubricating oil have declined in ratio to those of motor fuel. During 1930, for each gallon of lubricating oil 46 gallons of motor fuel were sold. In 1933 the ratio declined to the point where 55 gallons of motor fuel were sold for each gallon of lubricating oil. The lowest and highest ratio of the companies is also shown. It varied, for the large companies, from 29 to 88 gallons of motor fuel per gallon of lubricating oil and, for the small companies, the ratio varied from 21 to 102 gallons.

Charles L. Suhr Now Pennzoil Chairman; Robert S. King Chosen President

OIL CITY, Pa., Mar. 19.—Complying with his request to be relieved of a part of his responsibilities as president of the Pennzoil Co., the directors at their annual meeting here today elected Charles L. Suhr chairman of the board and named Robert S. King president and general manager. Mr. Suhr's continued association with the company gives assurance that the influence which has directed Pennzoil's steady growth is not to be withdrawn.



CHARLES L. SUHR

In assuming the chairmanship of Pennzoil, Mr. Suhr leaves a large number of his duties in highly capable hands. Mr. King resigned last spring as vice president in charge of marketing of General Petroleum Corp. and had in 1930 served as chairman of the Socony-Vacuum marketing committee. The new president will take the place on the board vacated by the resignation of D. J. Cavanaugh.

ROBERT S. KING

Attention of the Petroleum Industry Is Now Focused on Houston Exposition

HOUSTON, Tex., Mar. 18.—The attention of the petroleum industry is focused on the Oil Equipment and Engineering Exposition to be held in the Convention Hall at Houston, Tex., April 8 to 13, inclusive. This will be the only oil show held during 1935. It will be more than a mere display of tools and machinery since it is the object of the exposition to make the show educational and by combining the technical and practical present the application of equipment to meet the problems encountered in the field and plant. Many special features have been planned among which will be demonstration work on a large outside space adjacent to the exposition building and other means of showing the use of the most modern methods and equipment to meet contingencies that arise in oil operations.

E. G. Lenzner, general manager of the Oil Equipment and Engineering Exposition, announces that a number of representatives of foreign oil companies will be in attendance.

Great interest is being shown by exhibitors in the arrangement of their displays. Much of the equipment will be in operation and some will be demonstrated under field conditions. Prizes are being offered for the best exhibits and judging will be based on the method of presentation of products as well as on beauty of booth and without any consideration of the size of the exhibit. The judges will be Chase E. Sutton, branch manager, Pure Oil Co.; Stanley Gill, consulting petroleum engineer; E. C. Lawry, petroleum engineer, Shell Petroleum Corp.; Paul Hubbard, chief engineer, Gulf Refining Co., and Bill Doherty, petroleum engineer, Humble Oil & Refining Co.

To assist inventors in presenting their devices and to give manufacturers an opportunity to consider additions to their line of products, one section of the oil show will be devoted to new inventions.

Teams representing oil companies operating in all parts of the state will compete in a first aid contest that will be held daily during the week the Exposition is in progress. The supervision is under an executive committee consisting of the following: P. E. Keegan, Shell Petroleum Corp., Houston; G. O. Lockwood, Empire Companies, Bartlesville, Okla.; H. N. Blakeslee, American Petroleum Institute, Dallas; R. E. Donovan, Standard Oil Co. of California, San Francisco, Calif.; J. J. Delahide, E. D. Bullard Co., Houston; Theodore H. Felds, Harris County Emergency Corps, Houston; R. B. Roaper, Humble Oil & Refining Co., Houston; C. L. Hightower, United Gas System, Houston; Claude Liles, Magnolia Petroleum Co., Beaumont; C. A. Miller, Texas Co., New York; E. G. Lenzner, Oil Equipment & Engineering Exposition; and F. P. Werner, American Petroleum Co., Houston.

Tickets for the Exposition are being provided without charge to all connected with any branch of the oil industry.

TO EXPLAIN TAX BURDEN

BOSTON, Mass., Mar. 16.—A campaign of publicity so that the consumers of petroleum products will become aware of the tremendous burden of taxation levied against the oil business was advocated by Col. Allen Peck here at the eleventh annual meeting of the Independent Oil Men's Association of New England. Colonel Peck gave data showing the large increase in gasoline taxes and other petroleum taxes. He said that the industry which represented 5 per cent of the national wealth was paying 11 per cent of the total taxes.

Other speakers included A. W. Clark of the American Oil Burner Dealers Association, Lawrence A. Appleby of the industrial relations department of the Socony-Vacuum Oil Co., Inc., and P. A. Brewer, president of the association. Approximately 1,000 oil marketers of New England attended the meeting.

Newest Welding Methods Demonstrated by "Airco"

The Air Reduction Sales Co. is putting on interesting welding and cutting demonstrations this week at points in Oklahoma and Kansas. Both the oxyacetylene and electric methods are shown by specialists. The demonstrations include piercing of steel billets with the oxygen lance, cutting irregular shapes from steel plates with a new type machine, bevel cutting and Aircowelding of steel pipe, testing of welded coupons, Aircobrazing of Walseal pipe fittings, heavy machine cutting, rivet cutting by latest method, metal spraying with Metalayer, arc welding of thin gauge and heavy plate, arc welding with bare and shielded arc electrodes, and others.

All processes and equipment demonstrated are of modern type. The shows are serviced by Air Reduction Sales Co.'s world's fair truck. There are no motion pictures and there is no admission fee. An open forum is held after each demonstration, when questions are answered and practical instructions given.

Demonstrations were held in Oklahoma City, American Body and Trailer Co., March 18; Tulsa, Hinderliter Tool Co., March 19; Enid, Okla., Hackney Iron and Steel Co., March 20: Thursday, March 21, the demonstration will be held in Wichita, Kans., at the plant of the Clear Vision Door Co., 822 East Harry Street, at 7:30 o'clock in the evening, and Friday, March 22, at the same hour the show will be put on in Independence, Kans., at the plant of the Atchison Revolving Door Co.

THOMAS BILL HEARING

WASHINGTON, D. C., Mar. 19.—Hearings on the Thomas bill will be held April 16 Senator Thomas announced. Characterizing the efforts of the oil state governors to formulate an interstate compact as merely camoflage to forestall any action, he stated that the reason for Governor Allred's desire to be heard was to delay action until it is too late to pass the bill.

The senator also announced that Governor Marland would be invited to address the committee during the hearings.

PACIFIC COAST A.P.I.

LOS ANGELES, Calif., Mar. 16.—The American Petroleum Institute, Division of Production, Pacific Coast district, will hold its spring dinner meeting Tuesday, April 2, at the Jonathan Club, Sixth and Figueroa Streets, Los Angeles.

Enforcement of curtailment will be discussed by Pierson M. Hall, U. S. attorney for the southern district of California. Relation of Research to Production Problems, by Dr. William N. Lacey, California Institute of Technology, and Commercial Aviation and the Oil Industry, by H. W. Beck, Transcontinental & Western Air, Inc.

MAGNETIC STORM

Tucson, Ariz., observatory of the U. S. Coast and Geodetic Survey report a severe magnetic storm started at 6:00 p. m. (C. S. T.) March 13 and ended at 9 p. m. (C. S. T.) March 18th. The telegrams follow:

"Storm began thirteenth. Zero. Severe."

"Storm ended eighteenth. Three."

Late Fields

OKLAHOMA

Carter Oil Co. brought in two wells in the Fitts Pool in Pontotoc County, Oklahoma, this week, No. 7 Richards, SW SE SE Section 30-2-7, starting at 644 bbls. the first hour, 473 bbls. the second hour, through casing. Total depth 4,185 feet. No. 8 Richards, NE NE SE, Section 30, flowed 688 bbls. the first hour and 684 bbls. the second hour through casing. No. 6 Richards, SE NW SE Section 30, was nearly at pay depth when last reported. E. H. Moore and others' No. 1-A Schaurer, NW SW NW Section 29-8-7, started at 804 bbls. the first hour and 722 bbls. the second hour through casing.

In the Altus Field in Jackson County, Petroleum Producers and others' No. 1, SW SW SE Section 34-2n-20w, is a 25-bbl. pumper, producing from granite wash at 1,404-46 feet. In the same field, the Harrell-Davis Oil Co.'s No. 1, SW SW NW Section 1-1n-20w, had granite wash at 1,395-1,414 feet and no oil showing, and it was said the owners would abandon the test.

Carter Oil Co.'s No. 3 in Section 9-25-6, Osage County, is a 200-bbl. well after a shot in the Bartlesville sand at 2,670-2,720 feet. The well had been drilled to 2,815 feet and plugged back.

KANSAS

Atlantic Oil Producing Co. has made a location for another well in Scott County, where the company opened the Shallow Water Pool, so named because it is close to the town of Shallow Water. The new location is in the C SE SE Section 28-20-33w. The discovery well was in Section 15-20-33w.

GULF COAST

HOUSTON, Tex., Mar. 19.—Humble Oil & Refining Co.'s No. 1 Middleton, east of Anahuac, northern Chambers County, increased its production to 30 bbls. per hour flowing through a three-eighths inch choke, with tubing pressure 1,800 pounds and casing pressure 2,350 pounds and is now shut in for storage. Production is coming from the Frio sand bottomed at 7,088 feet.

Engineer Recommends East Texas Be Reduced

AUSTIN, Tex., Mar. 18.—Gordon Griffin, chief petroleum engineer for the Texas Railroad Commission, recommended today that allowable oil production in the East Texas Field be reduced about 4 per cent, effective April 1.

The commission heard testimony on which to base its statewide proration order for April. The present allowable is approximately 1,044,000 bbls. daily but Administrator Ickes recommended it be decreased to 1,021,000 bbls. daily for next month.

Citing an average bottom hole pressure decline of 11 pounds the past month, Mr. Griffin suggested that output of East Texas wells be cut from 3.6 per cent of hourly potential to 3.45 per cent. He said the 3.45 basis probably could be retained for several months. He estimated that production April 1 on that basis would be 434,847 bbls., whereas it would be 451,680 bbls. unless the change was made.

The engineer also urged that the allowable for the North and South Government Wells Fields in Duval County be reduced from 20,254 bbls. to approximately 16,850 bbls., stating that the pressure decline in that area had been "excessive." Representatives of the operators there asked for a recheck of the pressure figures.

Spokesmen for operators in the Cayuga Field in Anderson County and the McCamey and south Ward County fields in West Texas requested increases of 1,000 bbls. daily for each of those pools.

Current allowable production for the State is approximately 1,044,000 bbls. daily.

Texas Legislature Framing New Oil Law; Test of Connally Law in Federal Court

AUSTIN, Tex., Mar. 18.—Public hearing by the house oil and gas committee on a bill to revise and eliminate flaws in the state oil and gas conservation laws will be held this week, Representative Sidney Latham of Longview, who introduced it, said.

Representative R. W. Calvert of Hillsboro said the bill was drawn to insure orderly development of Texas' oil resources and husband the State's interests in mineral rights.

"It will prevent destructive production, protect the State's general revenues and royalties of the University of Texas and A. & M. College are enjoying from West Texas."

The corrective measure was designed to strengthen, among other things, enforcement machinery by clarifying certain regulatory provisions, Representative Hugh B. Steward of Fairfield said. Signature of 83 members of the house on the bill testify to its necessity, Representative Steward, one of the strong supporters, pointed out, and upholds the contention it is not a controversial measure.

The present market demand statutes expire in September. The re-enacting bill would remain in force until September, 1937.

Representative Steward declared that since several amendments have been tacked on since 1931 making it difficult to determine the present status of the laws, the bill would codify the main oil statutes; prescribe needed procedural changes; give the Railroad Commission power to enjoin "threatened" regulation violations; prohibit and define waste and eliminate a great amount of litigation tieing up conservation enforcement.

Anti-Waste Bill

"The bill is essentially an anti-oil waste measure, written in conformity with the established policy of the state," Representative Calvert said. "It favors no particular section, locality or field. Better methods to avert wasteful exploitation would be provided. It looks to the future and at the same time takes care of the present conditions on a basis of sane conservation.

"It corrects defects in the laws now and retains the best features which have stood the tests in courts and whose worth have been thoroughly proven. The vital necessity of its passage is easily apparent."

Assertedly in no way conflicting with the stand Governor Allred and Ernest O. Thompson, chairman of the Railroad Commission, took at the Dallas oil compact parley against price fixing, the bill would make market demand consideration in prorating production permissive with the Railroad Commission, Representative Steward said. The bill sets out this feature would be employed primarily as a weapon to check physical waste.

Sponsors recalled that Governor Allred opposed at the Dallas conference any provision in the oil pact which would have placed Texas in the position of having market demand for Texas oil determined by other states.

Representative Calvert said he saw in the bill stabilization that gives the small man a fair chance to survive.

"Demoralization of Texas' great oil industry would be felt, as it has in the past, by all the state," he declared.

Representative Steward asserted opposition, if any, was expected from the "hot" oil element whose activities have been the most disturbing element in the industry.

With the Federal Tender Board again functioning with the state tender board in checking untendered petroleum in interstate and intrastate, Representative Calvert said the bill would furnish another strong force against federal regulation.

Connally Law Attacked

Federal Judge Randolph Bryant, sitting at Beaumont Saturday, denied the motion of the Merrimac Oil Co. and the Oil Sales Co. for an injunction to restrain the Federal Tender Board from interfering with certain interstate shipments of oil products.

Judge Bryant directed F. W. Fischer, counsel for the plaintiffs, to furnish the tender board with additional statistical information it has demanded before it is willing to issue the tender.

Fischer based his allegation on a portion of the new Connally oil law and supplementary regulations made by Administrator Ickes.

In ruling against the petition, Judge Bryant declared he was not making a decision as to the legality of either the Connally act or the Ickes regulations.

He instructed Fischer that if, after furnishing the tender board with the additional information it requires, a tender still is denied, to come before him for another hearing, at which time he intimated he probably will give them a restraining order.

Norman L. Meyers, Malcolm McCorquodale and John W. Davis, members of the tender board, were present to argue their side of the case.

Grant Exception Selling Filling Station Property

Administrator Ickes has ruled that exceptions may be made in the disposition of filling station properties as specified in the Pacific Coast Petroleum Agency Agreement and Refiners Agreement in the following instances. Administrator Ickes' ruling follows:

Whereas, after due investigation I have found that this virtual inability to dispose of service station property causes undue hardship to landowners in cases falling within the following categories:

Cases in which the property was under mortgage, the mortgage was in default, and the owner, having been unable to secure rental from independent operators, could prevent the loss of the property only by leasing to an oil company from whom rent could be regularly collected to meet mortgage payments.

Cases in which the property represented an asset in the hands of a receiver or trustee in bankruptcy or liquidation. A receiver or trustee, not being in a position to operate the station, is virtually confined to the leasing of the station as a method of realizing an income therefrom.

Cases in which the operator, for reasons of health, must leave the business, the only ready method of disposing of the business being to sell or lease the station.

Cases in which, by reason of other equally pressing circumstances not included in the above categories, the station, in fairness to the owner or operator, should be cleared for sale or lease to an oil company; and,

I have further found and determined that the effectiveness of the provision of the Refiners Agreement contained in Section 12(b) will be unimpaired, and undue hardship on the aforesaid landowners will be avoided if exceptions to this provision of the agreement are granted in meritorious cases.

Now, therefore, I hereby authorize and empower the Petroleum Administrative Board to grant exceptions to the provision of Section 12(b) of the aforesaid Refiners Agreement in cases arising under the operation of the agreement.

Humphrey and Pratt Are Directors of Mission Corp.

William F. Humphrey, president of the Tide Water Associated Oil Co., and H. Irving Pratt, Jr., have been elected directors of the Mission Corp., which holds a 20 per cent common stock interest in the Tide Water Associated and a controlling stock interest in the Skelly Oil Co. The stock in these companies formerly were owned by the Standard of New Jersey but was recently distributed through the Mission Corp. in the form of one share of the Mission for 25 shares of the Standard of New Jersey in the case of the Tide Water Associated stock and one share of Mission for 75 shares of the Standard of New Jersey in the case of the Skelly stock distribution.

The new directors succeed John Parks Davis, president of the Mission, and H. F. Rawli, secretary and treasurer.

In a letter to stockholders of the Mission Corp., W. S. Farish, chairman of the board of the Standard Oil Co. (New Jersey), explained that a group of executives of the Tide Water Associated have an option to purchase 250,000 shares of the Mission at $14.30 per share. The option, which is for three years, is held by Revada, Inc. In regard to the Mission Corp., Mr. Farish said:

"Mission Corp. has no liabilities and its investments in the shares of the two companies (Tide Water Associated and Skelly Oil Co.) have a present market value of approximately $14,000,000. As of December 31, 1934, the book value of the stock of the Tide Water Associated Oil Co. was $13.76 a share and that of the stock of the Skelly Oil Co. was approximately $20 a share. It would seem reasonable that any general improvement in the oil industry should be reflected in the value of these stocks."

Byles Presents Protest on Tanker Regulation

WASHINGTON, D. C., Mar. 18.—Axtell J. Byles, president of the American Petroleum Institute, today appeared before the Senate interstate commerce committee in opposition to the proposed bill granting to the Interstate Commerce Commission regulatory powers over all forms of commerce. Mr. Byles' remarks were directed at that portion of the bill which would give the Government authority to regulate commerce of oil tankers.

It was Mr. Byles' contention that the commerce carried by the tankers was a noncompetitive service, it being physically impossible for any other form of transportation to handle the traffic in petroleum and its products. He asked that tankers be eliminated from the proposal stating that 90 per cent of oil tankers were represented by the Institute, and that the Institute had unanimously voted in favor of elimination of this form of control from the bill.

MINERALS ADVISORY COMMITTEE

WASHINGTON, D. C., Mar. 18.—John Finch, director of the United States Bureau of Mines, has appointed a minerals advisory committee, composed of 28 dollar a year men to assist the Bureau and the Minerals Committee of the Natural Resources Board in working out the plans suggested by the Resources Board in its recent report to President Roosevelt.

Five representatives of the oil industry are included in the committee. They are Axtell J. Byles, president of the American Petroleum Institute; W. R. Boyd, Jr., executive vice president of the Institute; Amos L. Beaty, Phillips Petroleum Co.; and Harvey C. Fremming and John C. Coulter, of the International Association of Oil Field, Gas Well and Refinery Workers.

Two members of the natural gas industry have also been appointed: Frank L. Chase, former president of the National Gas Association, and J. D. Creveling, advisory counsel of the American Gas Association.

NATURAL GASOLINE MANUFACTURE

Natural Gasoline Product Used in Wiley Post Flight

A fuel made from natural gasoline exclusively except for a relatively small portion of lead tetraethyl fluid, supplied the power for Wiley Post to drive the famous Winnie Mae from Los Angeles, Calif., to Cleveland, Ohio, in record time, the distance being covered at an elevation of 35,000 feet above the surface of the earth. Traveling at a rate averaging 279 miles per hour, through an atmosphere which scientists still feel contains many unsolved mysteries, Mr. Post was able to meet all conditions up to the time he saw his oxygen supply running low. He decided to land at Cleveland instead of trying for the assigned destination, New York, when the supply of oxygen started to run low and from Cleveland he continued on to New York in a transport plane to meet Frank Phillips, president of the Phillips Petroleum Co., who sponsored the flight.

The gasoline used was made from natural gasoline and was specially fractionated to permit efficient operation after the plane reached the stratosphere and at the same time enable the plane to lift the heavy load off the ground at Los Angeles. This required a perfect balancing of fractions to provide optimum conditions for yielding power, holding consumption to a minimum and supplying the motor with fuel at temperatures reaching down to 70 degrees below zero and in an atmosphere where the air is at a pressure of about one-third that on earth. The motor fuel had an octane value between 85 and 87 and contained less than the amount of lead generally used to blend aviation gasolines to this octane value. The special motor fuel was costly to manufacture but the flight proves the worthiness of natural gasoline as a source of superior motor fuels.

In the stratosphere, which extends from 6 to 10 miles above the earth the air is very dry. In a brief enumeration of the various air strata the following should be included:

First comes the troposphere — the region of normal air surrounding the earth. Next is the tropopause, a comparatively shallow layer lying 6 to 10 miles above the earth, the altitude varying with latitude, and then the stratosphere. After this comes the so-called ozonosphere, which is supposed to be a tenuous layer of ozone only about as thick as a light blanket.

Next is the somewhat hypothetical inosphere, which is supposed to consist really of two similar layers, the existence of which is deduced largely from reflection of radio and sound waves.

Estimates as to the distance to which air of some kind extends upward from the earth vary from 150 to 500 miles.

REGAL DISTRIBUTORS EXPAND

LETHBRIDGE, Alberta, Mar. 16.—Regal Distributors, Ltd. of Calgary have taken over the marketing facilities here of the Prairie Cities Oil Co., including a retail service station and the wholesale depot at 1116 First Avenue, South. D. Bullock will continue as manager of the wholesale plant and Peter Dawson as service station operator. The purchase gives the company a chain of retail distributing stations in Alberta from Lethbridge in the south to Grande Prairie in the north. The Regal organization operates a refining plant at East Calgary and is Alberta distributor for Conoco "germ processed" motor oil. H. E. McDonald, sales manager, of Calgary visited Lethbridge in connection with the transfer.

Natural Gasoline Shows Better Demand Than Straightrun or Cracked Gasolines

A review of the relative production of natural, cracked and straightrun gasolines over the past several years shows relatively constant trends in the use of all three products. Straightrun gasoline output has followed the increase in total consumption, maintaining practically the same level in per cent production from crude. The increase in cracked gasoline production which was the largest factor in the steep curve throughout the 1920's has shown a tendency to level off. Natural gasoline has followed the trend of cracked gasoline somewhat, but present indications favor it for a greater percentage increase in consumption during 1935.

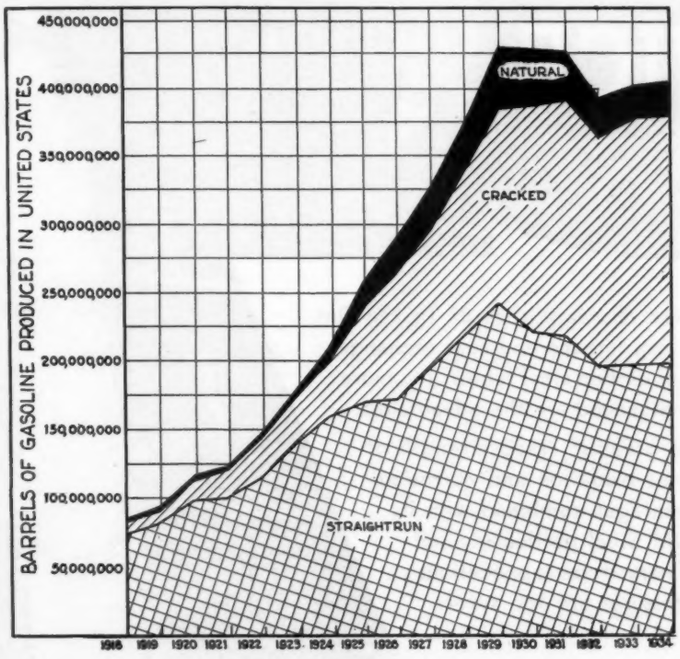
The use of natural gasoline in motor fuel as shown in the accompanying graph increased steadily since the birth of the industry to the year 1929. From that year on, its consumption went into a decline which ended only in 1934. The decrease in total gasoline produced during 1930 and 1931 was shared by straightrun and natural. In the refineries, however, cracked gasoline continued to gain, more than compensating for the drop in straightrun. Natural gasoline, the large percentage of which was produced outside refineries, was then responsible for the slight decline in total gasoline production. A drop in all three gasolines was witnessed in 1932.

Since the beginning of the industry, refiners have followed the trend toward better quality of finished gasoline. Straightrun has been improved in distillation characteristics, but natural gasoline and cracked stock have commanded the attention of refiners in improving octane and volatility characteristics. The adoption of cracking was in turn affected by the use of tetraethyl lead in gasoline. This method of increasing octane value is recognized as a major factor in retarding the adoption of cracking and reforming. As the secondary production of natural gasoline from cracked gases in the refinery constitutes a considerable source of the product, the slowing up in the adoption of cracking points to a demand for natural gasoline from natural gasoline plants, in proportion to the overall increase in gasoline demand.

There is still another factor in natural gasoline demand. The volatility of gasoline is becoming more and more a characteristic of gasoline quality. During 1935 there is expected to be a strong trend toward volatility improvement of regular grade gasoline. Installation of improved refinery equipment to take care of this development will probably lag the demand. It will remain for the natural gasoline operator to supply the component which will improve the gasoline. Thus a good year is predicted.

The movement now on foot for establishment of a 65 octane, higher endpoint gasoline to be marketed as a fourth grade will not greatly affect the natural gasoline market, as it will consist almost entirely of blended straightrun and cracked gasoline. This grade will find use in trucks and buses in which operation is continuous for long periods at a time. However, the definite strengthening of regular grade at the expense of third grade for use in passenger cars will benefit natural.

The past two years as shown in the graph indicate a gradual gain from the 1932 setback in gasoline production. Straightrun gasoline has increased slightly, due probably to the large output of East Texas refiners. Increased use of cracked gasoline was resumed in 1933 but lagged last year, the production remaining practically constant.



Survey of relative production of straightrun, cracked and natural gasolines over the past 17 years

New Pennsylvania Plant to Produce Liquefied Gases

Plans have been completed for the erection of one of the largest liquefied gas plants in the country. This plant is to be located at Lucinda, Clarion County, Pennsylvania, and operations are estimated to begin within two months.

To supply this installation, which will have a daily capacity of 2,000,000 feet of gas, 12 strings of tools will begin drilling the first 100 wells this spring of an extensive program planned by John H. Ware, of Philadelphia, president of Gas Oil Products Co., Inc., the operator. In charge of the work is Willard Shreffler, general superintendent.

The liquid gas plant is going up on the site of the abandoned Lucinda refinery. The railroad siding and a small building housing a 100-horsepower Bessemer engine comprise the only properties which may be salvaged for use. New equipment will include two fractionating towers 48 feet high and each weighing 48 tons. The heavy construction is required to withstand the pressures of 1,500 to 2,000 pounds per square inch giving a large safety factor. Six 100-horsepower Bessemers will also be added.

The products will be natural gasoline, propane, butane, iso-butane and methane to be marketed in heavy containers in liquid form. To liquefy the gaseous materials temperatures colder than liquid air will be applied. The liquefaction of these gaseous hydrocarbons will require a temperature of —171.9° F., and a pressure of 735 pounds per square inch, for methane, while the remainder will become fluid at much higher temperatures and lower pressures, ranging from 174.6° F. to 275.8° F., and 522 pounds to 647 pounds pressure.

The extent of the drilling program contemplated is indicated by the size of the installation. Wells in the Clarion Field district where this particularly suitable gas is produced, usually gauge from 5,000 to 10,000 feet a day. To run the plant at capacity more than 250 wells would probably have to be connected. The operators have been buying and leasing acreage for the past seven months, and while the total is not available, it is understood that several thousand acres have been acquired. The wells average from 1,100 to 1,200 feet in depth, the production is from the third, fourth and fifth sands.

The operation of this plant will substantially increase the production in Pennsylvania and West Virginia which comprise the Appalachian district.

SOCONY-VACUUM DISTRIBUTOR

The Socony-Vacuum Oil Co., Inc., has appointed the Weinman Oil Co., a well known distributor of petroleum products in this region, as distributor for products in the Steubenville, Ohio, area.

The Weinman Co., headed by Andrew G. Weinman, started with one service station in 1923. Since then the company has expanded until it now owns and operates a chain of outlets.

WALTER SAYBOLT MANAGER

NEW YORK, Mar. 18.—J. W. Saybolt has been appointed manager of lubricating oil sales for the domestic marketing units of the Standard Oil Co. (New Jersey) which includes Standard Oil Co. of New Jersey, Colonial Beacon Oil Co., Standard Oil Co. of Louisiana and Standard Oil Co. of Pennsylvania. He succeeds R. T. Haslam recently appointed general sales manager of the company.

A. B. Boehm succeeds Mr. Saybolt in charge of the automotive and industrial sales division of lubricating oil sales.

TIMKEN DM STEEL

for Longer, Safer Refinery TUBE SERVICE

THE superior high temperature characteristics of Timken DM Steel extend the life of cracking furnace and heat exchanger tubes far beyond that of ordinary carbon steel tubes. The more severe the service, the more pronounced are the advantages.

Timken DM Steel possesses the greatest creep strength of any low alloy steel, plus excellent oxidation and corrosion resisting properties. These advantages combined with its great reserve strength, make DM Steel particularly suitable and economical for refinery tube applications where the temperatures and pressures are too severe for carbon steel.

The service record of Timken DM Steel Tubes during two years' use in several oil refineries indicates a life expectancy at least double that of carbon steel tubes under similar conditions. The prospect of longer life and fewer replacements makes Timken DM Steel Tubes a profitable investment wherever carbon steel tubes are failing due to temperature, pressure or both.

THE TIMKEN STEEL & TUBE COMPANY, CANTON, OHIO

District Offices or Representation in the following cities: Detroit Chicago New York Los Angeles Boston Philadelphia Houston Buffalo Rochester Syracuse Tulsa Cleveland Erie Dallas Kansas City St. Louis Cincinnati Huntington Pittsburgh

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NEWS FOR PETROLEUM REFINERS

Rudolph Sonneborn Heads Oil Trades Association

NEW YORK, Mar. 18.—Rudolph G. Sonneborn, official of L. Sonneborn Sons, Inc., was elected president of the Oil Trades Association at the eighteenth annual meeting which was held at the Waldorf Astoria this week. He succeeds J. W. Saybolt, manager of lubricating oil sales for the Standard Oil Co. of New Jersey. Mr. Sonneborn has been active in

—Blank & Stollar Corp.

R. G. SONNEBORN

association work for several years and is widely known in New York marketing circles.

Other officers elected at the annual meeting were: Charles V. Bacon, vice president; Joseph C. Smith of the Smith Weihman Co., secretary, and Philip C. Meon, treasurer. The directors elected included Charles V. Bacon of Charles V. Bacon, Joseph B. Cleaver of Raclin, Snow & Cleaver, Inc.; George E. Getchell of Archer, Daniels Midland Co., Philip C. Meon of Borne Scrymser Co., John F. Renick of Renick & Mahoney, Inc.; Lawrence A. Ryan of Fiske Brothers Refining Co., J. Walter Saybolt, Joseph C. Smith, Rudolph G. Sonneborn, Albert J. Squier of Diamond Products Co., George Suraud of Chelsea Oil & Supply Co., Homer F. Wilhelm of Socony-Vacuum Oil Co., Inc.; John C. Wolke of L. Sonneborn Sons, Inc.

MONTANA TAX DEFEATED

The proposed tax levy of 2½ cents per barrel on crude oil shipped into Montana in a bill before the legislature of that state failed to pass. The bill was aimed at crude shipped into the state from Wyoming oil fields to petroleum refineries in Montana. It is not believed the bill would have been declared constitutional if it had been enacted into a law as the Constitution of the United States explicitly forbids any state from levying a tariff against a product produced in another state or foreign country.

ALBERTA GASOLINE TAX

EDMONTON, Alberta, Mar. 16.—The Alberta provincial budget, brought down recently in the legislature, provides for an increase in the gasoline tax from 6 cents to 7 cents an imperial gallon. The tax, applicable also to fuel oil, is expected to yield an added revenue of $450,000 a year.

DYER SUCCEEDS LEGE

DALLAS, Tex., Mar. 19.—The resignation of Fred M. Lege, Jr., as Texas State chairman of the oil industry code, was announced by him here Thursday as simultaneous announcement was made from Washington of the confirmation of Arthur P. Dyer, field representative for the committee, as chairman of the National Planning and Coordination Committee.

Mr. Lege has been Texas chairman since the inception of the petroleum code and under his direction one of the most effective and extensive organizations in the country was set up. In his capacity he has worked closely with all marketers throughout the State. His resignation was tendered due to the pressure of company business as vice president of the Magnolia Petroleum Co. and manager of the marketing division.

Announce Program of Missouri Marketers

While the program for the Missouri Oil Men's Association meeting at the President Hotel in Kansas City, March 27 and 28, is not entirely complete, President George S. Allee announces the following speakers:

L. V. Nicholas, president, Warner-Quinlan Co., New York City, on "Current Problems in Petroleum Marketing."

Dr. Gustav Eggloff, Universal Oil Products Co., Chicago, on "Modern Products From Petroleum."

J. Howard Pile, Chek-Chart Corp., Chicago, on "Modern Motor Car Lubrication."

Grady Triplett, editor, Petroleum Marketer, Houston, Tex., on "East Texas and Its Influence on the Gasoline Market."

Senator James C. McDowell, Charleston, Mo., on "1935 Legislation—the State's Need for Additional Revenue."

E. D. Eitelman, division manager of Missouri and Kansas, Barnsdall Oil Co., on "Stabilizing an Industry."

WISCONSIN PRICES FIRM

MILWAUKEE, Wis., Mar. 16.—Gasoline prices in Wisconsin are holding steady with the exception of a few isolated cases of retailers, following the issuance last Saturday of a temporary injunction by Federal Judge F. A. Geiger, restraining the Wisconsin department of agriculture and markets from further enforcing its price fixing order of February 11.

YORKTON REFINERY

YORKTON, Saskatchewan, Mar. 16.—Construction will shortly be commenced on the refinery of the Great West Refining Co. W. D. Craig, president, and Perry L. Withers, vice president, recently completed purchase of a 20-acre site in the southeastern portion of the city.

SHELL OIL CONFERENCE

WINDSOR, Ontario, Mar. 16.—Executives of the Shell Oil Co. of Canada, Ltd., held a conference at the Prince Edward Hotel here with about 75 western Ontario dealers last week. Harry Burt, local manager, presided, and speakers included W. Y. Knox, general sales manager; R. C. Watson, divisional sales manager; J. M. Gilbertson, service station manager; C. W. Chamberlin, advertising manager, and J. Linley of the advertising department.

Seek System of Grading Motor Fuels in Canada

OTTAWA, Canada, Mar. 16.—Representatives of various provincial governments together with the National Research Council are conferring here on specifications for grades of gasoline.

Heretofore, there have been no uniform standards for gasoline grading throughout Canada. The lead in the matter was taken last year by Nova Scotia, when the provincial government, assisted by the research council, drew up specifications for gasoline sold within the province, and made it mandatory upon producers and distributors to maintain the standards established. New Brunswick, it is understood, will enforce standards acceptable to the other provinces, and Ontario and Quebec are contemplating a similar step. The attitude of the western provinces is less certain.

Concurrently with these developments, the Canadian government purchasing standards committee has been preparing specifications defining the quality of gasoline to be supplied to departments of the federal government. Tentative specifications for this purpose have been adopted by the committee.

POST OFFICE BIDS

The post office at Chicago is requesting bids for supplying it with 250,000 gallons of gasoline for its requirements in the second quarter of 1935. Sealed bids in duplicate will be received until 10 a.m. March 19 and then opened publicly. Delivery will be made in tank trucks. The gasoline must be in accordance with current federal specification VV-G-101.

NORTH STAR IMPROVEMENTS

WINNIPEG, Manitoba, Mar. 16.—The North Star Oil Co. has taken out a permit for extensive replacement and repairs to its refining plant at St. Boniface. The plant is to be completely modernized.

OIL COMPANY ORGANIZED

MONTREAL, Quebec., Mar. 16.—Pacific Oil Co. of Canada, Ltd., is being organized with head office here for the manufacture and marketing of petroleum products throughout Canada.

Number Michigan Plants Growing at Rapid Rate

MUSKEGON, Mich., Mar. 18.—Aggregate refinery capacity in central Michigan has been increased to 26,000 bbls. of crude daily with the recent completion of a new 2,000-bbl. plant by the McClanahan Refineries at St. Louis, Mich., with another 1,500-bbl. plant under construction by the Pentagon Refining Co. at Plymouth to make a total of 27,500 bbls. not including the large White Star plant at Trenton, Mich., near Detroit.

The group now totals 14, including 11 operating with a combined capacity of 24,500 bbls. daily crude capacity, two shut down with capacities of 1,500 and 300 bbls., respectively, and the one of 1,500 bbls. under construction.

Operating plants and their location are: Central Refining Co., St. Louis, 300 bbls.; Kent Refining Co., Grand Rapids, 500 bbls.; Keystone Refining Co., Detroit, 2,100 bbls. just completed; McClanahan Refineries, Inc., St. Louis, 2,000 bbls., just completed; Midwest Refining Co., Alma, 2,000 bbls.; Naph-Sol and Old Dutch, Muskegon, each 3,000 bbls.; Pure Oil Refining Co., Midland, 3,500 bbls.; Roosevelt Refinery, Mount Pleasant, 6,000 bbls.; Superior Refinery, Elsie, 1,000 bbls., and Sweet Oil Refining plant, Wyman, 750 bbls.

Standard Oil Co. of Indiana's 1,500-bbl. plant at Zilwaukee, near Saginaw, and the H. H. Cross Co.'s 300-bbl. plant in the Muskegon oil field, are shut down. Pentagon's new 1,500-bbl. plant at Plymouth, near Detroit, completes the picture in Michigan today.

The Wayco Refining Co., of Detroit, also is running exclusively Michigan crude in its 2,000-bbl. Toledo plant.

AMERICAN BURNER MEETING

The program for the twelfth annual convention of the American Oil Burner Association which will be held at the Claridge Hotel, Atlantic City, N. J., on April 8 and 9, is as follows: Monday, April 8, 2 p. m., meeting of the board of directors in the Rose Room; Tuesday, April, 9, 9:30 a. m., annual meeting and election of directors; 10:30 a. m., meeting of the new board of directors. At 2:30 Tuesday afternoon there will be a manufacturers' conference open to members and nonmembers of the association. At 7 p. m., Tuesday evening the association will hold its annual dinner which will be informal.

NEW WHITE STAR STORAGE

MUSKEGON, Mich., Mar. 18.—Construction of the new $175,000 White Star, or Socony-Vacuum storage tank farm and western Michigan rail and water distribution center is to be started this week in Muskegon.

Hoyt Hollister, chief engineer, planned to return to Muskegon this week to let the grading contract for the new tank farm. Bids also will be taken this week for laying a double 6-inch pipe line about 1½ miles long from the tank farm site on the Muskegon Belt Line Railway to the Grand Trunk car ferry slip and on a piling wharf to be constructed on the east side of the Grand Trunk commercial slip where huge Socony-Vacuum tankers will dock with cargoes of gasoline and other petroleum products.

Don Glass, White Star construction engineer, arrived this week to assist in building the new plant, which will include several large spheroid storage tanks, a warehouse, an office, the pipe line and the wharf. The plant is expected to be completed ready for the first shipments of gasoline about May 1.

March Revision of Gasoline Allocations

The Refinery Board of Review reports the following appeals and decisions rendered.

The board also announced that its next monthly session will be held in Washington, D. C., on Monday, April 8, 1935, which is the final date that appeals from quotas fixed for April may be perfected and presented before the board for decision at that session.

Appellant—	District No.	March quota (bbls.)	Increase requested (bbls.)	Decision
National Refining Co.	3	48,904	6,096	Denied
Phillips Petroleum Co.	4	380,000	30,000	Denied
Phillips Petroleum Co.	5-A	444,500	145,500	Denied
General Petroleum Corp.	8	367,349	126,651	Deferred
Cushing Refining & Gasoline Co.	4	35,000	20,000	Denied
Waggoner Refining Co.	5-A	.....	.....	Withdrawn
Standard Oil Co. of California	8	1,460,128	305,000	Deferred
Socony-Vacuum Oil Co.	1	232,000	117,000	Denied
Total		2,907,881	750,247	

Tank Car Gasoline Market Continues to Grow Stronger in Chicago District

By SPECIAL CORRESPONDENT

CHICAGO, Mar. 18.—After two full weeks of improvement, the tank car gasoline market is continuing strong at the best levels yet reached and has been showing its ability to absorb irregularities in impressive style. Three classes of buyers have furnished the bulk of the buying support as the betterment has proceeded. The three are major companies, carlot marketers and jobbers. The jobbers have been inclined to skepticism as to the permanency of the strengthening movement, but general belief is that the tank wagon and service station price advance, now generally expected at almost any time, will tend to remove those doubts.

Carlot marketers have been quite active buyers on the advance. They apparently had little material in storage. Their reports as to their ability to move the material they had or that which they brought on the way up indicate that jobbers are a little more ready to buy than earlier in the year, but still there is no rush to purchase on their part. They are maintaining as strong a cash position as possible. Nevertheless, they realize that the larger consumption of the spring season should increase their gallonage and make desirable the carrying of slightly larger inventories than has been their habit during the winter months.

Low Octane Strong

Because it was more seriously depressed, low-octane gasoline has shown a slightly better comeback in price from its low level of a few weeks ago than has middle octane material, but since the attention of major buying companies is devoted more closely perhaps to the middle than the low grade, it seems likely they may show equal strength. These large buyers are figuring on a differential of about 1 cent between the two.

Meanwhile, attention of the trade is fastened upon the tank wagon and service station situation, for it is generally understood that these prices are now to follow tank car markets almost automatically, probably in units of three-tenths cent a gallon. In fact, such a move was made in Wisconsin, as required by the state minimum price law. The granting of a temporary injunction in federal courts to the Coryell interests against enforcement of the law has not yet disturbed the Wisconsin price structure. However, the provisions of other pending laws are causing much uncertainty and nervousness. This is true, however, in many other states as well, and many oil men are out actively campaigning against many proposals which they believe adverse to their interests.

Decisions Discounted

Recent decisions of the petroleum code administration, relative to cancellation of exclusive dealing contracts by dealers and employe designations are having little effect upon the oil marketing business as yet in this region and there are indications that they will have less effect in the future than was expected. The rulings have caused few notices of cancellation nor have any important majors, so far as is known, embraced the new employe definition in their operations. Many authorities contend that the former ruling is of little significance and that the latter cannot be complied with by the industry without wiping out profits and causing huge losses.

Heating Oils

In the last two weeks heating oils have made a decided turnabout in tone, and are now quite firm and offered in only limited quantities, contrasted with a sloppy condition earlier. Several large refiners who were offering these materials readily have now withdrawn their offers and apparently are changing their product to meet kerosene or tractor fuel re-

(Continued on Page 48)

Crude Oil Prices

(Continued from Page 29)

Humble Oil & Refining Co. and Texas Co. Effective September 20 in Salt Flat by Shell Petroleum Corp.

Rocky Mountain States

Iles, light (Sept. 29, 1933)	$.96
Iles, heavy (Sept. 29, 1933)	.90
Florence, Colo. (June 17, 1933)	.80
Fort Collins and Wellington, Colo. (June 17)	(See Salt Creek prices)
Big Muddy (Sept. 29, 1933)	1.01
Frannie, light (May 1, 1934)	.70
Frannie, heavy (Sept. 29, 1933)	.62
Salt Creek and LaBarge (Sept. 29, 1933)	
See Stanolind Mid-Continent price schedule	
Grass Creek, light (Sept. 29, 1933)	1.18
Grass Creek, heavy (Sept. 29, 1933)	.62
Elk Basin (Sept. 29, 1933)	1.18
Rock Creek (Sept. 29, 1933)	1.02
Lance Creek (Dec. 16, 1932)	.92
Hudson (June 2, 1931)	.65
Lost Soldier (Sept. 30, 1933)	.88
Hamilton Dome, all grades (Feb. 16, 1935)	.57
Torchlight (Sept. 29, 1933)	1.18
Greybull (Sept. 29, 1933)	1.18
Pondera (Sept. 29, 1933)	1.25
Sunburst (Sept. 29, 1933)	1.35
Cat Creek, Montana	1.07
Hogback (Sept. 29, 1933)	1.11
Lea County, N. Mex. (Sept. 29, 1933)	.75
Maljamar (Sept. 29, 1933)	.70
Artesia-Jackson (Dec. 1, 1933)*	.75

Note—Salt Creek, Torchlight, Elk Basin, Grass Creek, Frannie, Greybull, Hogback and Iles by Stanolind Oil & Gas Co. Elk Basin, Grass Creek light, Big Muddy, Rock Creek and Sunburst by Ohio Oil Co. Lost Soldier posted by Producers & Refiners Corp. Artesia, Jackson and Maljamar posted by Continental Oil Co. Lea County, effective September 29, 1933, by Humble Oil & Refining Co. and other buyers; Fort Collins, Wellington, Orchard, Florence, Big Muddy, Cat Creek, Rattlesnake and Table Mesa by Continental Oil Co. Osage posted by Arro. Hamilton Dome, Wyo., by Stanolind Oil & Gas Co. Pondera, Mont., by Ohio Oil Co. (Stanolind Oil & Gas Co., effective January 1, 1935, posted $1 per barrel in Pondera.)

*Continental Oil Co.

North Louisiana and Arkansas

Smackover, Ark. (all grades)	$.70
Tullos, Urania, La. (Jan. 13, 1934)	.87
Nevada, Ark. (Sept. 29, 1933)	.60
East El Dorado (Sept. 29, 1933)	.70
Converse, La. (Mar. 17, 1934)	1.01
Elm Grove, La. (Sept. 29, 1933)	.75
Holly, La. (Nov. 17, 1934)	1.01
Pleasant Hill, La. (Mar. 17, 1934)	1.01
Zwolle, La. (Mar. 17, 1934)	1.01
Champagnolle, Ark. (Mar. 17, 1934)	.81
Lisbon, Ark. (Mar. 17, 1934)	1.01
Stephens, Ark. (Sept. 29, 1933)	.70
Urbana, Ark. (Mar. 17, 1934)	.60
Other fields	(See gravity table)

Note—Smackover: Effective September 29, 1933, Texas Co., Magnolia Petroleum Co., Standard of Louisiana, Louisiana Oil Refining Corp., Gulf Refining Co. and Phillips Petroleum Co. East El Dorado posted by Magnolia Petroleum Co. and Gulf Refining Co., Nevada by Standard Oil Co. of Louisiana. Urbana posted by H. L. Hunt, Inc., and Louisiana Oil Refining Co. Converse, Holly, Zwolle and Urbana by Standard Oil Co. of Louisiana; Elm Grove by Simmons Oil & Refining Co.; Pleasant Hill by Standard Oil Co. and Magnolia Petroleum Co. Champagnolle by Standard Oil Co. and Lion Oil & Refining Co.

Eastern States

TIDE WATER PIPE CO.
(Effective Feb. 4, 1935)

Bradford, Pa.	$2.35
Allegany, N. Y.	2.35

SOUTH PENN OIL CO.
(Effective Feb. 4, 1935)

Pennsylvania Grade Oil in National Transit Lines (Bradford Field)	$2.35
Pennsylvania Grade Oil in Southwest Pennsylvania Lines	2.02
Pennsylvania Grade Oil in Eureka Pipe Line lines	1.97
Pennsylvania Grade Oil in Buckeye Pipe Line lines	1.87
Corning Grade Oil in Buckeye Pipe Line Co.'s lines (Oct. 2, 1933)	1.87

PENNZOIL CO.
(Effective Feb. 4, 1935)

Pennsylvania Grade Oil in National Transit Lines:	
Group A (Includes Cochran, Franklin, Hamilton and Doolittle districts.)	$2.37
Group B (Includes Titusville district.)	2.36
Group C (Includes Turkey and Tidioute districts.)	2.35
Group D (Includes Bear Creek and Porkey districts.)	2.34
Group E (Includes Eldeneau, Bull Creek, Rough Run, Carbon, Dipner, Bredin, McJunkin, Jameson, Kennerdell, Emlenton, Tiona, Lacey and Kinsua districts. Price depends on length of pipe line haul to plant at Oil City.	2.31

PURE OIL CO.
(Effective Jan. 4, 1935)

Cabin Creek, W. Va.	$1.83
Bradford Hollow, W. Va.	1.83
Kelly Creek, W. Va.	1.77

CREW-LEVICK CO.
(Effective Jan. 4, 1935)

Oil City-Titusville	2.13

Middle Western States

OHIO OIL CO.

Lima (Feb. 1, 1935)	$1.15
Illinois (Jan. 5, 1934)	1.13
Princeton, Ind. (Jan. 5, 1934)	1.13
Plymouth	Shut in
Western Kentucky (May 26, 1934)	1.03
Midland, Mich. (Sept. 30, 1933)*	1.01
West Branch, Mich.	.89
Oceana, Mich. (Oct. 5, 1933)	.90
Somerset, Ky. (Sept. 30, 1933)	1.13

*Posted by Pure Oil Co. and Simrall Pipe Line Co. Producers Pipe Line Co. pays 5 cents per barrel over Pure Oil Co.'s posted prices. West Branch, Mich., posted by Simrall Pipe Line Co. Somerset, Ky., crude purchased by Ashland Refining Co., Ashland, Ky., and posted price includes premium. Oceana posted by Old Dutch Refining Co. and Naph-Sol Refining Co.

Canada

Ontario (September 9, 1933):	
Petrolia*	$2.19
Oil Springs	2.17
Turner Valley (May 21, 1934):†	
Clear naphtha	$2.65
Discolored naphtha	2.37
Crude oil, 50 gravity	2.19
Crude oil, 45 to 49.9	2.07
Crude oil, 40 to 44.9	1.89

*Imperial Oil, Ltd. †Imperial Oil, Ltd. and Regal Oil & Refining Co.

Mexico

Panuco*	$1.01

*F.o.b. ship, based on January transactions and exclusive of production and export taxes and bar dues.

California Crude Oil Prices

STANDARD OIL CO. OF CALIFORNIA
(Effective September 6, 1933)

For current purchases of crude oil at the well (unless otherwise specified). (All gravities above those quoted take highest price offered in that field.)

Gravity—	Long Beach	Seal Beach, Alamitos Heights	Huntington Beach	Inglewood	Playa del Rey	Olinda, Brea Canyon	Athens-Rosecrans	Torrance	Richfield	Whittier, La Habra	Montebello	Santa Fe Springs	La Habra-Coyote	Midway-Sunset, Elk Hills, Buena Vista Hills	Lost Hills	Coalinga	Coyote
14-14.9	$.65	$.65	$.65	$.65	$.65	$.65	....	$.65	$.65	$.65	$.65	....	$.65	$.57	$.57	$.57	$.65
15-15.9	.65	.65	.69	.69	.66	.69	....	.66	.65	.65	.65	....	.65	....	....	....	.65
16-16.9	.66	.65	.72	.73	.69	.73	....	.69	.67	.68	.65	....	.65	....	....	....	.68
17-17.9	.69	.65	.75	.76	.73	.76	....	.72	.70	.71	.65	....	.68	....	....	....	....
18-18.9	.72	.65	.78	.80	.76	.79	....	.75	.74	.74	.65	....	.71	.61	.61	.59	.71
19-19.9	.75	.65	.81	.83	.80	.82	....	.78	.78	.78	.65	....	.74	.64	.65	.62	.74
20-20.9	.78	.68	.83	.87	.83	.85	....	.81	.82	.81	.66	....	.78	.67	.69	.65	.78
21-21.9	.81	.72	.86	.90	.87	.88	....	.83	.85	.84	.69	$.72	.81	.70	.73	.68	.81
22-22.9	.84	.76	.89	.94	.90	.92	....	.86	.89	.87	.72	.76	.84	.73	.76	.72	.84
23-23.9	.88	.81	.92	.97	.94	.95	$.83	.89	.92	.90	.76	.79	.87	.77	.79	.75	.87
24-24.9	.91	.85	.95	1.01	.97	.98	.86	.92	.97	.93	.80	.83	.90	.81	.82	.78	.90
25-25.9	.94	.89	.98	....	1.00	1.01	.90	.95	1.00	....	.85	.87	.93	.85	.85	.81	.93
26-26.9	.97	.93	1.01	....	1.04	1.04	.94	.98	1.04	....	.89	.90	.96	.89	.88	....	.96
27-27.9	1.00	.98	1.04	....	....	1.07	.97	....	1.08	....	....	.94	.99	.92	.91	....	.99
28-28.9	1.03	1.02	1.07	....	....	1.10	1.01	....	1.11	....	....	.98	1.02	.97	.94	....	1.02
29-29.9	1.06	1.05	1.09	....	....	....	1.04	....	1.15	....	....	1.01	1.05	1.01	.97	....	1.06
30-30.9	1.09	1.10	1.12	....	....	....	1.08	....	....	....	....	1.05	1.09	1.05	1.00	....	1.09
31-31.9	....	....	....	....	....	....	1.12	....	....	....	....	1.08	1.12	1.09	....	....	1.12
32-32.9	....	....	....	....	....	....	1.16	....	....	....	....	1.12	1.15	1.13	....	....	1.15
33-33.9	....	....	....	....	....	....	....	....	....	....	....	1.16	1.18	1.17	....	....	1.18
34-34.9	....	....	....	....	....	....	....	....	....	....	....	1.19	1.21	....	....	....	1.21
35-35.9	....	....	....	....	....	....	....	....	....	....	....	1.23	....	....	....	....	....
36-36.9	....	....	....	....	....	....	....	....	....	....	....	1.26	....	....	....	....	....
37-37.9	....	....	....	....	....	....	....	....	....	....	....	1.30	....	....	....	....	....
38-38.9	....	....	....	....	....	....	....	....	....	....	....	1.34	....	....	....	....	....

Additional Standard Oil Quotations

Mountain View—Effective July 3, 1934, the following are the prices of the Standard Oil Co. of California for its current purchases of crude oil at the well in the Mountain View Field: 14 to 19.9 degrees, 57 cents; 20-20.9, 58 cents; 21-21.9, 59 cents; 22-22.9, 61 cents; 23-23.9, 63 cents; 24-24.9, 66 cents; 25-25.9, 69 cents; 26-26.9, 72 cents; 27-27.9, 75 cents, 28-28.9, 78 cents; 29-29.9, 81 cents; 30-30.9, 84 cents; 31-31.9, 87 cents; 32-32.9, 90 cents; 33 degrees and above, 93 cents.

Elwood Terrace—F.o.b. ship, 33 degrees, $1.03; 34 degrees, $1.06; 35-35.9, $1.09; 36-36.9, $1.12; 37 degrees and over, $1.15.

Newhall—14 degrees and over, 57 cents.

McKittrick and Kern River—14 degrees and over, 57 cents.

Wheeler Ridge—14 to 17.9 degrees, 57 cents; 18-18.9, 58 cents; 19-19.9, 61 cents; 20-20.9, 64 cents; 21-21.9, 67 cents; 22-22.9, 70 cents; 23-23.9, 73 cents; 24-24.9, 76 cents; 25 degrees and over, 79 cents.

Kettleman Hills—33-33.9 degrees, 93 cents; 34-34.9, 96 cents; 35-35.9, 99 cents; 36-36.9, $1.02; 37-37.9, $1.05; 38-38.9, $1.08; 39 degrees and over, $1.11.

The Texas Co. posted in Shiells Canyon, South Mountain and Santa Paula as follows: 14 to 17.9, 57 cents; 3 cents added for each degree up to and including 26-26.9 degrees at 84 cents; then 4 cents added for each degree up to and including 30 degrees and over at $1. Company posts Standard Oil Co.'s Montebello prices in Montebello and North Whittier, and posts Standard Oil Co. prices in Signal Hill, Alamitos Heights, Huntington Beach, Torrance, Richfield and Santa Fe Springs, all effective September 6.

General Petroleum Co. posts Standard Oil Co. prices in Athens, Rosecrans and Signal Hill; Alamitos Heights up to 26-26.9; Santa Fe Springs up to 35-35.9; Richfield up to 25-25.9; Brea Canyon and Olinda up to 25-25.9, and Torrance up to 25-25.9.

Union Oil Co., effective September 6, posts same price as Standard Oil Co. in all fields in which both purchases, excepting that in Athens-Rosecrans, Union Oil Co. posts 21-21.9, 72 cents, and 33--33.9, $1.18; 34-34.9, $1.21, and 35-35.9, $1.24.

Associated Oil Co., effective September 6, posted same prices for the same grades as Standard Oil Co. of California, excepting that in some fields its gravity scale stops as follows: Huntington Beach, 28 degrees and over; Seal Beach and Alamitos Heights, 26 degrees and over; Coyote Hills, 23 degrees and over; Richfield, 25 degrees and over; Torrance, 25 degrees and over; Inglewood, 24 degrees and over; Santa Fe Springs, 35 degrees and over; Midway-Sunset, Elk Hills, Buena Vista Hills, 30 degrees and over. Also Associated pays 52 cents for oil of 11 to 13.9 gravity in McKittrick, Kern Front, Kern River, Midway-Sunset, Elk Hills, Buena Vista Hills and Coalinga.

May Link Loma Novia-North Government Wells; Showing in Rockdale Field, Milam County Test

SAN ANTONIO, Tex., Mar. 18.—The favorable showings encountered in two tests, midway between the Loma Novia Field and Government Wells Field, Duval County, which if proved productive, may link these fields together, and a 1,200-foot extension to the Rockdale Field, Milam County, held the attention of operators in the Southwest Texas district during the week.

Frank Gravis and others' No. 1 Hahl, in the northeast quarter of Survey 64, midway between the North Government Wells Field and the Loma Novia Field, cored saturated sand from 2,554-58 feet, and without making a drill stem test, the operators cemented 7-inch casing at 2,554 feet, and were preparing to drill plug late in the week. One mile south of this test, L. & R. Oil Co.'s No. 1 Hahl in the NE Section 63, cored gas sand from 2,571-58 feet and from 2,585-87 feet it cored sand showing oil, but on a three-minute drill stem test from 2,561-78 feet, it tested dry gas with 400 pounds of working pressure through a three-eighths inch choke on bottom, and a one-half inch choke on top. It was then cored to 2,619 feet where it tested salt water and was coring. Unless it cores more oil sand it will be plugged back and completed as a gas well. The outcome of the two tests is important, as it indicates the field will be considerably larger than first anticipated.

The field was extended approximately a half mile southeast, when Humble Oil & Refining Co. completed No. 2 Ruiz in Survey No. 353 for an initial production of 44 bbls. per hour through a three-sixteenths inch choke, with casing pressure 310 pounds and tubing pressure 150 pounds, from a total depth of 2,829 feet. Most of the acreage in the field is owned by Humble Oil & Refining Co., Texas Co., Magnolia Petroleum Co. and Shell Petroleum Corp.

Rockdale Field

Mincryst's No. 1 Dymke, in the Allen Survey, extended the Rockdale Field, Milam County, approximately 1,200 feet southeast when it was completed at a total depth of 1,551 feet for an initial production of 100 bbls. daily. It topped the sand at 1,547 feet. The completion is expected to cause some additional development for this old field which was discovered in 1921. Eight miles southwest of Rockdale in the Johnson Survey, H. V. Pederson's No. 1 Sandow, which has been standing at 1,575 feet, is being rigged up, and will be drilled to the Edwards lime, expected at around 3.700 feet.

Karnes County

A south extension was registered for the Burnell gas field, southern Karnes County, by completion of Herman L. Brown's No. 1 Timberg for a large gas well in sand at around 3,300 feet. It encountered the sand 7 feet lower than the discovery well. Farther south, Luling Oil & Gas Co. is making preparations to drill No. 1 Boyce, about 150 feet out of the northwest corner of the Boyce 500-acre tract. American Liberty Oil Co. is rigging up for No. 2 Belknap, 300 feet from the northwest line and 840 feet from the northeast line of the Chase Haynes Survey.

Webb County

Another important extension loomed for the Bruni Townsite area of the Cole Field, Webb County, when O. W. Killam's No. 32 Bruni, in Block 26, Survey No. 8 of the Foltz Subdivision of the Mariano Arispe grant, approximately 1,500 feet southeast of the discovery well in the Bruni Townsite area, cored saturated sand from 3,418-25 feet, the total depth, and is now waiting on 7-inch casing to set, cemented at 3,415 feet. It has indications of making one of the best wells to be completed in the area.

Balcones Fault Area

Acid treatment in the Balcones Fault Zone area is beginning to play an important part in developments among several of the old Edwards lime pools. With the exception of Serpentine production in Caldwell, Bastrop and Williamson, most of the production in this area is found in the Edwards lime formation, and until recently only a few wells tested the Austin chalk. However, there seems to be a decided swing toward the policy of drilling for the Austin chalk, since the use of acid treatment has increased considerably the production in many of the older fields. In the Luling area, Grayburg Oil Co. completed No. 13 McKean in chalk at a total depth of 1,780 feet for 75 bbls. daily, without the use of acid. It is 500 feet north of the company's No. 4 McKean, which is producing from the Edwards lime. The company is moving in rig to drill No. 14 McKean, about 700 feet from No. 13 McKean. In Caldwell County, Cargill and others' No. 2 Dameron, completed in the Austin chalk some time ago, was treated with acid, and increased its production from a few barrels daily to 100 bbls.

Darst Creek

H. H. Weinert is preparing to drill an interesting Trinity sand test on the west edge of the Darst Creek Field, Guadalupe County, which is producing from the Edwards lime. It is reported one major company has purchased 500 acres of leases around the proposed test for a price of $25 per acre. The location is in the Joel R. Robinson Survey, on the Lottie Bibbs 209-acre tract. The Trinity sand is expected at around 4,500 to 5,000 feet.

Williamson County

Another Serpentine prospect, in the southeastern part of Williamson County was condemned, when Helvetia Oil Co.'s No. 1 Spreckles was dry and abandoned at 924 feet in chalk, after it failed to encounter Serpentine. It is in the Strade Survey and about midway between the Byersville Pool and the Manda Pool in Travis County.

Frio County

In the Pearsall area, Frio County, approximately 3,000 feet southeast of Amerada Petroleum Corp.'s No. 3 Halff and Oppenheimer, a producer, the company made location for No. 1 Davies, but it is not likely to be drilled until the company officially completes No. 3 Halff and Oppenheimer, which was deepened the past week to a new total depth of 3,936 feet, and is reported to be making around 200 bbls. of fluid per day of which 40 per cent is b.s. and water. Before being deepened from 3,929 feet, it was making 5 bbls. per hour on gas jet. It is producing from the Navarro sand, and is causing considerable activity throughout the county. Wilbur D. Bacon is reported to have leased the Burns ranch of approximately 5,000 acres in the northeastern part of the county, near the Atascosa County line, and will announce location for a test in the near future. In the northeast part of the county, W. T. Shoemaker and others' No. 1 M. Roche, in Survey No. 139, is drilling below 2,440 feet and is reported to have shown some possibilities of production from the Navarro sand encountered in Amerada Petroleum Corp.'s test, approximately 25 miles southwest.

Kerr County

In southwestern Kerr County, on the Edwards plateau, Eastland Oil Co. and others' No. 5-E Jeff Love, which made considerable oil at 3,530 feet, is drilling below 4,500 feet, and it is reported the test will be carried to the Ordovician, which is expected at around 5,800 feet.

Jackson Trend

Development along the Jackson trend was rather disappointing during the week. One mile southeast of the Caesar Field, Bee County, Neversuch Oil Co.'s No. 1 Barroum, in the Charles Baker Survey, was abandoned at 3,504 feet, after it failed to get production in the Pettus sand topped at 3,120 feet. It is reported to have had a showing of oil. Mid-Texas Production Co.'s No. 1 Traveland, 1 mile northeast of the Normana district, was abandoned at 4,760 feet. It is in the Uranga grant. While these two tests were being marked failures, two new wildcat locations were made. Dirks Brothers and others have made location for No. 1 P. L. Campbell, 150 feet out of the northwest corner of Block 20 of the Brooks and Burleson Survey. It is northwest of No. 1 George Ray, drilled by the operators a few months ago. Three-quarters of a mile north of the old Pettus Field, Hartzendorf and others made location for No. 1 fee, 990 feet from the north line and 4,290 feet from the west line of the 200-acre tract, Abstract 209, in the George A. Kerr Survey.

Live Oak County

In eastern Live Oak County, California Oil Co.'s No. 1 Blankenship, in the A. A. Dunn Survey, is drilling below 3,700 feet and indications are it will be carried to around 4,900 feet. One mile north of the McNeil Field, R. Shelton is said to have closed a deal to take over and deepen Henderson Coquat and others' No. 1 Little, which was drilled to 5,314 feet several weeks ago. It is reported the test will be carried to 5,900 feet to test the Cook Mountain formation.

Sam Fordyce Field

A 600-foot southeast extension was registered for the Sam Fordyce Field, Hidalgo County, by the completion of Hill and Hill's No. 1-B John Lawrence, Tract 274, Porcion 39. It cored sand from 2,756-60 feet, the total depth, and was completed for 3 bbls. per hour on a one-eighth inch choke. On the southern edge of the central portion of the field, Rogers Oil & Gas Co.'s No. 3 Guerra, Tract 254, Porcion 40, cored sand from 2,727-61 feet, and was completed for an initial production of 10 bbls. per hour.

The Barnsdall Co. is reported to have purchased 110 acres of land in Porciones 38 and 100, between the Seabury, George and Taylor lands, and the Garcia Land & Cattle Co. land, in Porcion 100. The acreage was purchased jointly with the Phillips Petroleum Co. The total consideration was reported to have been a cash consideration of $22,000 and the same amount in oil.

Wildcat Operations in Southwest Texas

Week Ending March 16

ATASCOSA COUNTY

Southwestern Dev. Synd., Ltd.'s No. 1 Tom, 938 ft. from N line, 427 ft. from E line of fence on R.R. right of way, Edward O'Boyle Sur.
Moving in material.

BANDERA COUNTY

W. B. Kyle et al's No. 1 Duke, 300 ft. NW line, 150 ft. SW line of J. A. Bennett Sur. No. 7.
Waiting on rig; drlg. wtr. well.

Plateau Oil Co.'s No. 1 Garrison, G.C.&S.F. Sur. No. 506, 1,500 ft. from N and 2,700 ft. from E lines of survey.
T.D. 1,900 ft.; no report.

BASTROP COUNTY

Marts & Beavens' No. 1 Miller, 235 ft. from NE line, 414 ft. from SE line of Blk. 22, Dykes Sur.
T.D. 900 ft.; no report.

BEE COUNTY

Diamond Half Oil Co.'s (H. H. Weinert) No. 1 McKinney, 2,740 ft. from NW line, 330 ft. from NE line of Spenner Morris Sur.
S.D. 2,700 ft.

Cecil Hagan and Eastland Oil Co.'s No. 1 Fred Schroeder, 5 miles SW of Green.
Moving in material.

Haines-McMillan Oil Corp.'s No. 1 Stoltzfus, 150 ft. from N and E lines of NE¼ NE¼ NW¼ Sec. 14.
Derrick.

Humble O. & R. Co.'s No. 2 Thompson, 466 ft. NW of SE cor. of J. C. Wood tract, Wm. Burke Sur.
Drlg. 4,625 ft.

Jamison, Byron et al's (Dirks) No. 1 P. L. Campbell, Brooks & Burleson Sur.
Spudded.

Mid-Texas Oil Co.'s No. 1 Trabland, 330 ft. from S and E lines of 91-ac. tract, ½ mile E of Normana.
Abd. 4,760 ft.

Worth Oil Co.'s No. 1-A Rutledge, 100 ft. S of No. 1, B. Q. Hadley Sur.
Drlg. 2,300 ft.

BEXAR COUNTY

Campbell's No. 1 Cantu, offsetting Meador's No. 1 Cantau, 150 ft. SW line, Arocha

(Continued on Page 45)

ROCKY MOUNTAIN PRODUCTION

Estimated daily average production week ending March 16:

WYOMING	
Salt Creek	17,830
Big Muddy	1,700
Badger Basin	40
Black Mountain	120
Byron	500
Dallas Derby	510
Dutton Creek	80
Elk Basin	410
Ferris	10
Frannie	170
Garland	930
Grass Creek	shut in
Hamilton Dome	340
Hudson	230
LaBarge	1,250
Lance Creek	680
Lost Soldier	1,350
Mule Creek	shut in
Midway	50
Notches	shut in
Oregon Basin	2,300
Osage	740
Pilot Butte	30
Rex Lake	120
Rock River	1,440
South Casper	shut in
Poison Spider	110
Teapot	20
Total	31,510
MONTANA	
Buckley-Border	210
Cat Creek	730
Cut Bank	5,320
Kevin-Sunburst	3,450
Lake Basin	40
Pondera	980
Total	10,730
COLORADO	
Florence	250
Fort Collins and Wellington	440
Iles Dome	3,520
Moffat	490
Orchard	110
Rangely	90
Tow Creek	200
Total	5,100
NEW MEXICO	
Artesia	580
Cooper area	3,010
Eunice area	4,360
Hobbs	31,400
Hogback	190
Hospah	shut in
Jal	3,380
Lea area	1,410
Maljamar	1,830
Rattlesnake	740
Table Mesa	80
Total	46,980
Total Rocky Mountain region	94,320

East Texas Has 82 Locations and 87 Completions; Unit Plan for Long Lake Area Development

By L. E. BREDBERG

DALLAS, Tex., Mar. 18.—There were 82 locations reported in the East Texas Field this week and 87 tests were completed, all producers but one which was junked and abandoned; four were completed on the pump, one was completed as a "swabber," one came in flowing by heads, and another flowing through the casing.

Bob Peveto and Howze's No. 1 F. J. Watson, in O. Anderson Survey, 1 mile southwest of Tyler, Smith County, has cemented 10-inch casing at 178 feet.

Sun Oil Co. has staked a new wildcat to be drilled about 15 miles northeast of Tyler in the Camp Hill area, Smith County, approximately 8 miles west of the East Texas Field. The location is in Jonathan Lindley Survey, and 330 feet out of the northwest corner of Longley and Reeves' 141-acre tract.

Humble Oil & Refining Co.'s No. 1 Holderman, Trinity sand test, in C. Sullivan Survey, Hill County, is drilling below 2,734 feet. Top of Edwards lime was logged at 2,678 feet.

There was one wildcat test abandoned during the week. The test, drilled by McGlothin & McCarter on the Barnett farm, Elisha Powers Survey, 18 miles southeast of Corsicana, Navarro County, was dry at 3,930 feet. It topped Woodbine at 3,520 feet. Elevation is 345 feet.

Mr. Lykes recently completed his block of between 5,000 and 6,000 acres which is located between Brownsboro and Murchison, Henderson County. Sun Oil Co. is reported to be purchasing scattered acreage near the Lykes block.

Killough & Tucker and Tide Water Oil Co. are planning to get a well drilled in the Burleson Survey, Leon County, 4½ miles southeast of Keechi.

American Liberty Oil Co.'s No. 2 Spence, in Levi Sparks Survey, Rusk County, and in the extreme south end of the East Texas Field, top sand 3,659 feet, total depth 3,780 feet, sandy shale, estimated between 2,000,000 and 5,000,000 feet of gas through one-quarter inch choke, spraying a small amount of oil.

It is reported Sinclair Prairie has taken out 75 permits for wells to be drilled in the East Texas Field, and has already staked 35 locations.

Long Lake Area

It is reported Tide Water is planning to form units of from 100 to 120 acres in the Long Lake area, Anderson County, and drill one well to each unit. It has already formed one unit of 104 acres and has staked a location on the John Smith farm, J. Adams Survey, Anderson County.

H. L. Hunt is said to have made arrangements with Pure Oil Co., Stanolind Oil & Gas Co., Sun Oil Co., and Byrd-Frost, Inc., to drill a well in the Slocum area, Anderson County.

H. L. Hunt has a 2-inch welded line from his No. 1 C. A. Miller, gas well, located in S. Sanchez Survey, 1½ miles north of Magnolia Ferry, Anderson County, to the railroad and is pumping distillate from his well.

The Trinity sand test of the Tide Water Oil Co. and Texas Seaboard Oil Co., No. 21-A Wills, in the S. Edmondson Survey, Cayuga Field, northwest Anderson County, is drilling below 5,700 feet in lime.

Camp Hill

The Camp Hill test of the Gulf Production Co. on the M. J. Ross farm, in the Robert Erwin Survey, approximately 1 mile south of the company's No. 1 Davey and Royall gas discovery, in M. Rogers Survey, Anderson County, logged top first sand at 4,794 feet and second sand from 4,937-42 feet; red beds from 4,828-4,936 feet; the section showing a thickness of 108 feet; a drill stem test from 4,750-4,800 feet tested 900 feet of salt water in five minutes; drill stem test from 4,936-48 feet tested 1,100 feet of salt water in five minutes. The well is now coring below 4,948 feet.

Gulf Production Co.'s No. 2 Davey & Royall, in M. Rogers Survey, and 50 feet south of No. 1 Davey & Royall, gas well, Camp Hill area, Anderson County, logged top of sand at 448 feet showing oil, 6-inch casing cemented at 444 feet; total depth 456 feet oil sand. Gulf's No. 1 L. B. Ross, in J. C. Rosson Survey, Camp Hill area, logged top sand 543 feet, and now drilling below 700 feet. Gulf's No. 1 Rogers, in D. Parker Survey, 5 miles southwest of Elkhart, is drilling below 1,550 feet in shale.

EAST TEXAS COMPLETIONS

Gregg County

Atlantic's No. 5 Foster, top sand 3,562 feet, total depth 3,630 feet, initial production 158 bbls. an hour. Deep Rock Oil Corp.'s No. 13 Jones, top sand 3,585 feet, total depth 3,645 feet, initial production 30 bbls. in 15 minutes. Eastern Texas Petroleum Co.'s No. 19 Dunbar, top sand 3,594 feet, total depth 3,608 feet, shale, initial production 21 bbls. in 30 minutes. Empire Gas & Fuel's No. 12 J. Bander, top sand 3,556 feet, total depth 3,605 feet, initial production 32 bbls. in 15 minutes. Gulf Production Co.'s No. 9 M. F. Barker, top sand 3,536 feet, total depth 3,592 feet, initial production 80 bbls. an hour; No. 26 Fishburn, top sand 3,515 feet, total depth 3,561 feet, initial production 115 bbls. an hour; No. 73 Judge, top sand 3,481 feet, total depth 3,497 feet, initial production 65 bbls. an hour. H. B. W. Oil Co.'s No. 5 J. C. Gray, top sand 3,582 feet, total depth 3,620 feet, shale, initial production 15 bbls. in 15 minutes.

Johnson-Saben's No. 1 G. S. Mattox, top sand 3,613 feet, total depth 3,640 feet, initial production 40 bbls. an hour. D. B. Key's No. 2 H. Key, top sand 3,521 feet, total depth 3,542 feet, initial production 60 bbls. in 30 minutes. Lee & Burnett's No. 1 Turner, top sand 3,582 feet, total depth 3,594 feet, initial production 40 bbls. an hour. Magnolia Petroleum Co.'s No. 21 L. J. Everett, top sand 3,628 feet, total depth 3,636 feet, initial production 120 bbls. an hour; No. 16 H. L. Foster, top sand 3,570 feet, total depth 3,598 feet, initial production 120 bbls. an hour; No. 4 E. L. Magrill, top sand 3,644 feet, total depth 3,668 feet, initial production 76 bbls. an hour. F. W. Merrick's No. A-10 W. R. Nicholson, top sand 3,620 feet, total depth 3,628 feet, initial production 28 bbls. in 30 minutes. Roeser & Pendleton's No. B-4 Nicholson, top sand 3,630-42 feet, total depth 3,643 feet, shale, initial production 26 bbls. in 28 minutes, 2-inch tubing.

Selby Oil & Gas Co.'s No. 11 H. R. Snavely, top sand 3,555 feet, total depth 3,575 feet, initial production 28 bbls. in 30 minutes. Sinclair Prairie's No. B-13 J. W. Aiken, top sand 3,555 feet, total depth 3,560 feet, junked and abandoned; No. B-15 Aiken, top sand 3,563 feet, total depth 3,605 feet, initial production 35 bbls. in 15 minutes; No. 44 Moncrief, top sand 3,562 feet, total depth 3,610 feet, initial production 35 bbls. in 15 minutes; No. 45 Moncrief, top sand 3,546 feet, total depth 3,600 feet, initial production 37 bbls. in 15 minutes; No. 46 Moncrief, top sand 3,546 feet, total depth 3,600 feet, initial production 35 bbls. in 15 minutes; No. 14 Williams, top sand 3,520 feet, total depth 3,550 feet, initial production 35 bbls. in 15 minutes. H. R. Smith, Inc.'s No. 9 Bauknight, top sand 3,584 feet, total depth 3,605 feet, initial production 35 bbls. in 20 minutes.

Stanolind & Simms' No. 5 Boles, top sand 3,563 feet, total depth 3,629 feet, initial production 34 bbls. in 30 minutes. Texas Co.'s No. 8 Clements, top sand 3,709 feet, total depth 3,766 feet, initial production 70 bbls. an hour. M. E. Trapp's No. B-2 Miles, top sand 3,443 feet, total depth 3,476 feet, initial production 30 bbls. in 15 minutes. McDonnell & Campbell's No. 4 Corbin, top sand 3,526 feet, total depth 3,660 feet, initial production 110 bbls. an hour. Yount-Lee's No. 11 M. Jones, top sand 3,510 feet, total depth 3,529 feet, initial production 67 bbls. an hour, eleven-sixteenths inch choke; No. 14 Stuckey-Thrasher, top sand 3,549 feet, total depth 3,569 feet, initial production 65 bbls. an hour. Carroll and others' No. 1 Sharp, location abandoned. Empire Gas & Fuel Co.'s No. 8 V. L. Taylor, top sand 3,698 feet, total depth 3,701 feet, initial production 13 bbls. in 13 minutes.

Gulf Production Co.'s No. 10 W. R. Crim, top sand 3,621 feet, total depth 3,632 feet, initial production 78 bbls. an hour; No. 72 Hilburn, top sand 3,557 feet, total depth 3,583 feet, initial production 80 bbls. an hour; No. 74 S. Hilburn, top sand 3,592 feet, total depth 3,617 feet, initial production 60 bbls. an hour. Hensley & Dutton's No. B-2 E. L. Howard, top sand 3,597 feet, total depth 3,603 feet, initial production 60 bbls. in 30 minutes. McAllister Fuel's No. V-3 Sabine River, top sand 3,609 feet, total depth 3,610 feet, initial production 40 bbls. an hour. Magnolia Petroleum Co.'s No. 5 J. Blackman, top sand 3,611 feet, total depth 3,630 feet, initial production 20 bbls. in 15 minutes. Quad Corp.'s No. B-7 B. Duncan, top sand 3,542 feet, total depth 3,550 feet, initial production 80 bbls. hour, 2-inch.

Shell's No. A-21 B. F. Laird, top sand 3,524 feet, total depth 3,556 feet, initial production 100 bbls. an hour; No. 44 J. B. Watson, top sand 3,558 feet, total depth 3,641 feet, initial production 100 bbls. an hour; No. 54 J. B. Watson, top sand 3,542 feet, total depth 3,589 feet, initial production 40 bbls. in 30 minutes. Sinclair Prairie's No. 55 Cole, top sand 3,636 feet, total depth 3,640 feet, initial production 36 bbls. in 30 minutes; No. 57 Cole, top sand 3,640 feet, total depth 3,646 feet, initial production 30 bbls. in 30 minutes; No. 18 A. Lockhart, top sand 3,674 feet, total depth 3,682 feet initial production 60 bbls. an hour; No. 6 Thomas, top sand 3,694 feet, total depth 3,695 feet, initial production 42 bbls. in 30 minutes. Tide Water's No. 14 J. S. King, top sand 3,576 feet, total depth 3,590 feet, initial production 60 bbls. an hour.

Rusk County

DeArman & McMillan's No. 10 Roberson, top sand 3,560 feet, top Geo. lime 3,645 feet, total depth 3,650 feet, lime, initial production 30 bbls. in 30 minutes, 2-inch tubing. Devonian & Gulf's No. 32 R. A. Motley, top sand 3,759 feet, total depth 3,773 feet, initial production 60 bbls. an hour. Everetts Drilling Co.'s No. A-7 H. F. Crews, top sand 3,796 feet, total depth 3,797 feet, initial production 162 bbls. an hour. Gulf Production Co.'s No. 7 O. R. Baton, top sand 3,565 feet, total depth 3,674 feet, shale, initial production 30 bbls an hour. Humble Oil &

(Continued on Page 42)

East Central Texas Wildcats

Week Ending March 16

ANDERSON COUNTY

Gulf Prod. Co.'s No. 2 Davey & Royall, 50 ft. S of No. 1, M. Rogers Sur.
Top oil sand 448 ft.; 6-in. 444 ft.; T.D. 456 ft.; oil sand; W.O.C.

Gulf Prod. Co.'s No. 1 Delaney, in P. Martin Sur., 340 ft. N along E line of Delaney 209.37-ac. tract from SW cor. of Ross' 39.67 acres, and 300 ft. at R/A.
Derrick.

Gulf Prod. Co.'s No. 1 Calloway, P. Martin Sur., 305 ft. from S and 330 ft. from E. Location.

Gulf Prod. Co.'s No. 1 L. B. Ross, J. C. Rosson Sur., 330 ft. S and E of 35-ac. tract.
Began Mar. 12; 10-in. 665 ft.; top sand 543 ft.; drlg. 700 ft.

Gulf Prod. Co.'s No. 1 Flint & Scott, 385 ft. S along E line from NE cor. of 56.75-ac. tract and 330 ft. at R/A.
Location.

Gulf Prod. Co.'s No. 1 O. G. Rogers, 330 ft. out of NW cor. of D. Parker Sur., 5 miles SW of Elkhart.
Began Mar. 8; 10-in. 558 ft.; drlg. shale 1,550 ft.

Gulf Prod. Co.'s No. 1 M. J. Ross, 1,770 ft. from SW and 1,370 ft. from NW lines of Robt. Erwin Sur.
Elev. 434 ft.; top first sand 4,794 ft.; second sand 4,937-42 ft.; top red beds 4,828 ft.; D.S. test 4,936-42 ft. made 15 ft. mud; D.S. test 4,750-4,800 ft. made 900 ft. S.W. in 5 min.; D.S. test 4,936-48 ft. made 1,100 ft. S.W. in 5 min.; coring shale.

J. W. Luttes' No. 1 C. McKee, 2,640 ft. from N line of lease and survey and 330 ft. from W line of McKey 800-ac. tract.
Derrick.

Tide Water-Seaboard's No. 1 J. Smith, John Adams Sur., 668 ft. W of E line and 467 ft. N of S line of 41-ac. tract (Long Lake area).
Location.

Tide Water Oil Co. et al's No. 21-A Wells, 4,079 ft. N and 2,323 ft. W of lease, S. Edmondson Sur. (Trinity test).
Drlg. 5,763 ft.

Worsham's No. 1 Wathen, 1,400 ft. S and 467 ft. from E line of B. Towles Sur., NW of Cayuga.
Elev. 319 ft.; Pecan 2,255-2,398 ft.; drlg. 2,875 ft.

BOWIE COUNTY

Tex-Ark. Oil Co.'s No. 1 Hamilton Estate, 600 ft. E and 350 ft. N lines, J. Milan Sur., 4 miles S of Red River.
8-in. csg. set 210 ft.; W.O.C.

CHEROKEE COUNTY

Jacksonville O. & G. Co.'s No. 1 H. D. Henderson, 660 ft. from N and W lines of 40-ac. tract out of Tankersley 104-ac. tract, 5 miles NE of Jacksonville, J. Pineda Sur.
S.D. 693 ft.

Ponta Oil Co.'s No. 1 C. W. Darby, 1,944 ft. S and 630 ft. W of East Cyrus Parks Sur., 2¼ miles S of Summerfield.
Setting surface csg.

E. M. Thomason et al's No. 1 Addis Estate, 250 ft. S of survey and 150 ft. E of railroad, J. T. Jones Sur., 6 miles NW Alto.
Elev. 471 ft.; top Austin 4,897 ft.; cored 5,127-35 ft.; rec. Austin chalk; now fishing.

Wilson Stubbs Oil Co.'s No. 1 Rowborts, 450 ft. from S line, 150 ft. from W line of 100-ac. tract, 2 miles SW of Jacksonville, J. D. Wolfin Sur.
S.D. 1,553 ft.

T. J. Woods et al's No. 3 New Birmingham Dev. Co., 1,320 ft. from S and 150 ft. from E lines of 160-ac. tract, L. Jordan Sur., NE of No. 1.
Material.

ELLIS COUNTY

Beckner-Finley et al's No. 1 Coker, 2,900 varas along S line of grant from river and 1,700 varas N at R/A, R. De La Pena Sur.
S.D. 527 ft.

FREESTONE COUNTY

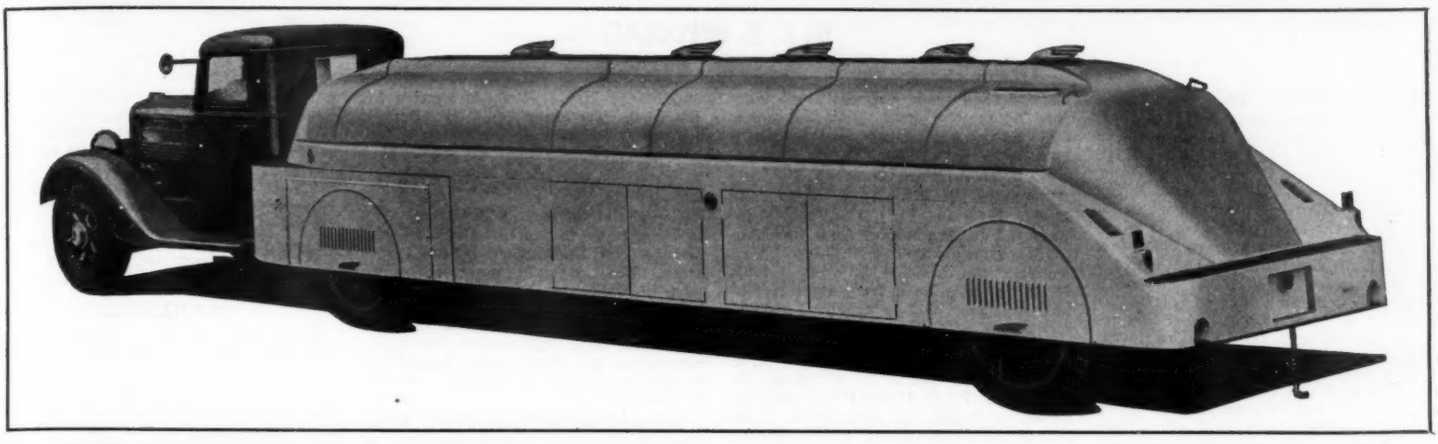
Amerada Pet. Corp.'s No. 1 Burk, 851 ft. S 125 ft. W of river, E. G. Rector Sur.
Top Woodbine 3,832 ft.; oil sand 4,013-25 ft.; S.D. 4,025 ft.; well has been making gas; shut-in csg. pressure 1,350 lbs.; tubing pressure 1,250 lbs.

Hoover et al's No. 1 McFall, 150 ft. S and W lines, S. Garrison Sur., E of Mexia.
Location.

Simms Oil Co. et al's No. 1 W. H. Goolsby,

(Continued on Page 44)

1935 AIRFOIL



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Will Carry Down Deep Test in Glasscock County; Deepest Test at 11,709 Feet, Recovery Poor

By L. E. BREDBERG
Fort Worth Bureau, The Oil and Gas Journal

FORT WORTH, Tex., Mar. 18.—Plans have been made to deepen John I. Moore and others' No. 1 McDowell, in Section 22, Block 34, Township 2s, T.&P. Survey, Glasscock County, West Texas' most interesting deep test, should it fail to show for a producer at present depth of 9,520 feet, where it bottomed in white lime. Bailing continued below 6,300 feet and so far it has failed to show increase in oil or gas. The hole is loaded with clear water. After bailing to bottom the hole will be cored 10 feet deeper and retested, providing it fails to show favorably at present depth.

This well, on a 5,900-acre unit block of which Loffland Brothers holds 53 per cent, topped the Pennsylvanian at 9,471 feet and had first showing of oil and gas at 9,484 feet with more high gravity oil and gas showing at total depth before setting casing. The 7⅝-inch casing was cemented at 9,468 feet.

John I. Moore and others' No. 2 McDowell, shallow test on the unit block, in Section 21, is drilling at 1,690 feet in red beds with a hole full of water.

World's Deepest Test

The world's deepest test, Gulf Production Co.'s No. 103 McElroy, in western Upton County, passed another hundred-foot marker early this week and is drilling at 11,709 feet in dark gray lime and green shale. Practically all of the last 100 feet was cored but recovery was very poor.

Among the interesting wildcat locations announced was Slack & White's No. 1 Reeves, 1,320 feet from north and west lines of Section 20, Block 56, P.S.L. Survey, in Loving County. Cranfill Brothers are moving in material for No. 1 Tubbs, 796 feet from south and 330 feet from west lines of Section 11, Block B-27, P.S.L. Survey, in Crane County. Sayre Oil Co. is moving in machine for its No. 2 Daugherty, 990 feet from south and 330 feet from east lines of Section 2, Block 26, P.S.L. Survey, Winkler County, in the Sayre Field area. In Jones County, United Producers' No. 1 T. P. Wood, 1,000 feet from north and 450 feet from west lines of tract in the B. Travenio Survey No. 190, is now drilling at 725 feet in shale.

Crane County

Wahlenmaier Petroleum Co.'s No. 1 Kloh, interesting wildcat in Section 33, Block 44, Township 3s, T.&P. Survey, northern Crane County, made one head after drilling plugs from the 7-inch casing set at 3,120 feet and is drilling in lime below 3,325 feet, which was total depth before casing was run. Elevation of this well is 2,796 feet and it topped the lime at 3,130 feet and had an oil showing from 3,295-3,315 feet.

Also in Crane County, Gulf Production Co.'s No. 9 Waddell, semiwildcat in Section 11, Block B-23, P.S.L. Survey, was shot with 360 quarts at total depth 3,518 feet but failed to clean itself. While cleaning out after the shot, it flowed 94 bbls. in 42 hours and is fishing for tools. Gulf Production Co.'s No. 1 Waddell, Ordovician test in Section 4, Block B-16, P.S.L. Survey, is drilling lime at 2,740 feet.

Prospect of Addis Pool production extending to the north seems unlikely as result of Stanolind's two tests at north end of this field. No. 5 Cowden, originally drilled to 4,447 feet, where it found water, and plugged back to 4,323 feet, is making a pumping test. At last report the well had pumped 5 bbls. of fluid in three hours. The same company's No. 6 Cowden, had made very little oil since shooting at total depth 4,050 feet and is still cleaning out. It may make a small producer.

Andrews County

Fuhrman Petroleum Co.'s No. 2 W. S. Boner, in Section 25, Block A-43, P.S.L. Survey, Fuhrman area of Andrews County, is spraying estimated 20 bbls. oil daily while drilling below 4,315 feet in lime. Pay was encountered from 4,221-27 feet and it is also making around 3,000,000 feet of gas.

The Means Field was extended slightly to the north this week by Humble Oil & Refining Co.'s No. 3 R. M. Means, in Section 4, Block C-45, P.S.L. Survey, which is testing at total depth 4,628 feet after acid treatment. It is estimated good for 150 to 200 bbls. oil daily.

East of Hendricks

East of the Hendricks Field and just south of Kermit, Winkler County, Fox & Butler & Jeffries' wildcat, No. 1 Brown & Altman, Section 6, Block B-5, P.S.L. Survey, may be pumped at present depth of 3,213 feet. Earlier in the week the well flowed 60 bbls. in 24 hours following a shot of 100 quarts from 3,110-13 feet but the flow dropped.

In this same area, Maxwell and Atlantic's No. 1 Clapp, Section 37, Block 26, P.S.L. Survey, is planning a test after standing acidized with 2,000 gallons for several days from 2,820-3,210 feet. It made one head through the casing and will be bailed.

Ector County

Ector County's two most interesting wildcats are drilling ahead in anhydrite. Gulf's No. 1 Goldsmith, in Section 10, Block 44, Township 1s, T.&P. Survey, set the 10¾-inch casing at 1,625 feet to shut off water and is going ahead below 1,700 feet in anhydrite. N. G. Penrose and others' No. 1 Kloh, in Section 31, Block 45, Township 1s, T.&P. Survey, 13 miles northwest of the Judkins Pool, is drilling at 3,255 feet in anhydrite.

NORTH TEXAS

Completion of Benton & Holmes' No. 6 Davenport, in the J. Fitch Survey, featured North Texas activity during the week. This well, in the northeastern part of the county and surrounded by small producers, made 2,840 bbls. the first 24 hours from 20 feet of oil sand with total depth 1,680 feet. The casing was set on top of the sand. A producer of this size is sure to stimulate activity in this area.

An important extension to the Knox-Manning Field, in central east part of Young County, will probably call for several offsets and has had a tendency to encourage operators in this section of North Texas. Charles E. Knox and others' No. 1 W. B. Harrison, near center of 200 acres in northeast part of the F. Jamie Survey A-157, swabbed 11 bbls. per hour from sand and shale at 2,702-33 feet and 2,757-59 feet. It is about a mile due west of the field which has two producing zones, a sand at 2,700 feet and lime around 3,800 feet.

Graham Pool

Another area that is now holding interest in North Texas, centers around the Graham Pool. Added impetus to activity in the area, which had lately shown signs of diminishing, was given by Lindsay Drilling Co.'s No. 2 Jeffrey Estate, in Section 3,413, T.E.&L. Survey, which had a good oil showing in the black Mississippi lime topped at 4,745 feet. About 45 feet of this formation was drilled and there is considerable in the hole prior to testing.

About 7 miles southwest of Graham, Rathke Oil Co.'s No. 1 W. H. Wadley, a deep wildcat in the A. W. Coffman Survey, is bailing 35 bbls. per day after shot from 4,317-4,415 feet in lime.

J. T. Tuohy and others have spudded No. 1 J. F. Fowler, about a mile north of Hood, in Cooke County. This is an Ellenberger test and is a mile northwest of old Deep Rock production. Major companies have taken production in the area and prospects for it making some kind of a well are thought to be good.

PANHANDLE

Skelly Oil Co.'s No. 1 D. E. Johnson, in S half Section 47, Block 24, H.&G.N. Survey, is one of the largest oil producers completed lately in this part of Wheeler County. It is producing from two separate zones of the granite wash and was brought in for around 890 bbls. daily with total depth 2,460 feet. Its northwest diagonal offset, Texas Co.'s No. 2 W. B. Bush, is showing for a larger initial having gauged more than 1,000 bbls. in 16 hours from three pay zones. Total depth is 2,504 feet and it will be officially completed this week.

WEST TEXAS COMPLETIONS

Crane County

Gulf Production Co.'s No. 109 McElroy, total depth 2,920 feet, top pay 2,745 feet, shot with 280 quarts from 2,770-2,905 feet, initial production 383 bbls. oil per day flowing through casing with 346,000 feet gas daily.

Ector County

Gulf Production Co.'s No. 6 State-University, total depth 3,700 feet, top pay 3,525 feet, shot with 320 quarts from 3,528-3,655 feet, initial production 244 bbls. oil per day flowing through 2-inch tubing with 440,000 feet of gas daily. Sun Oil Co.'s No. 3 Wight, total depth 4,300 feet, top pay 4,132 feet, shot with 290 quarts from 4,125-4,283 feet, initial production 309 bbls. oil per day flowing through casing.

El Paso County

Mesa Oil Co.'s No. 1 Coronado, total depth 1,415 feet, dry and abandoned.

Loving County

Covey and others' No. 1 Wheat, total depth 4,249 feet, plugged and abandoned. H. W. Martin and others' No. 4 Wheat-Ramey, total depth 4,265 feet, top pay 4,220 feet, shot with 200 quarts from 4,185-4,224 feet, initial production 45 bbls. oil per day and 2,000,000 feet gas daily.

Howard County

G. O. Chalk's No. 8 Chalk, total depth 3,033 feet, top pay 2,825 feet, initial production 413 bbls. pumping in 24 hours.

Pecos County

Gulf Production Co.'s No. 4 White & Baker, total depth 1,890 feet, dry and abandoned.

Taylor County

Dunnigan Brothers' No. 3 Hunter, total depth 2,425 feet, plugged back to 2,422 feet, top pay 2,366 feet, shot with 40 quarts from 2,366-2,376 feet, initial production 5 bbls. oil per day pumping.

Upton County

Stanolind Oil & Gas Co.'s No. 36 Burleson, total depth 2,040 feet, top pay 1,950 feet, treated with 1,000 gallons of acid, initial production 209 bbls. oil per day and 53 bbls. of water per day on pump.

Ward County

Atlantic Oil Producing Co.'s No. 20

Wildcat Operations in West Texas

Week Ended March 18

ANDREWS COUNTY

Fuhrman Pet. Corp.'s No. 2-B Boner, 440 ft. from N and 1,320 ft. from E, Sec. 25, Blk. A-43.
Drlg. 4,393 ft.; spraying little oil; no gauge.

Honolulu & Llano Oil Co.'s No. 1-B Parker, 440 ft. from N and 1,650 ft. from E, Sec. 11, Blk. A-43.
Derrick and moving in tools.

Humble Oil & Ref. Co.'s No. 3 Means, 1,980 ft. from S and 3,300 ft. from W, Sec. 4, Blk. C-45.
T.P. 4,140 ft.; T.D. 4,628 ft., lime; testing.

Humble Oil & Ref. Co.'s No. 3 Means, 660 ft. from N and 1,997 ft. from E, Sec. 9, Blk. A135.
Drlg. 3,337 ft., anhydrite.

Humble Oil & Ref. Co.'s No. 4 Means, 654 ft. from S and 1,997 ft. from W, Sec. 4, Blk C-45.
Ready to spud.

Stogner et al's No. 1 Richardson, 1,980 ft. N and 660 ft. E. Sec. 4, Blk. A-37, P.S.L.
Drlg. 3,045 ft., red and blue shale.

J. W. Tripplehorn's No. 1 Ogden, 330 ft. from S and 2,310 ft. from W lines of Sec. 6, Blk. A-46, P.S.L. Sur.
Cellar and pits.

Wahlenmaier et al's No. 1 Odessa Ranch Co., 1,320 ft. from N and E of Sec. 10, Blk. A-32, P.S.L. Sur.
Rigging up standard tools.

Wahlenmairer et al's No. 1 Cox Estate, 1,320 ft. from N and W of Sec. 8, Blk. A-33. Location.

York & Harper's No. 1 Hereford Stock Farms, C Labour 12, League 315, Parmer Co. School Lands.
T.D. 3,430 ft., anhydrite; running 8¼-in. csg.

BREWSTER COUNTY

F. C. Dodson's No. 1 Texas American Syndicate, 660 ft. from N and E, Sec. 66, Blk. 10, G.H.&S.A. Sur.
T.D. 180 ft., lime; P.B. to 150 ft. to straighten hole.

Joiner et al's No. 1 McIntyre, 353 ft. from S, 2,390 ft. from E of Sec. 21, Blk. 352, W. M. Mitchell Sur.
Drlg. 2,130 ft.

King & Franklin's No. 1 Gage Est., C Sec. 138, Blk. 22, G.H.&S.A. Sur.
Drlg. 692 ft., black lime; water and slight show oil 672 ft.

G. H. Storey's No. 1 Wilson, 1,980 ft. from N and E lines of Sec. 3, Blk. 212, T.&St.L. Sur.
Rigging up Star machine.

S. G. Smith's No. 1 Decie, 2,490 ft. from S and E, Sec. 7, Blk. 1.
T.D. 775 ft., lime; rerunning 6-in. csg.

COCHRAN COUNTY

Kelsey's No. 1 Slaughter, C Labour 36 League 150, R.C.S. Lands.
Derrick.

West Texas Development Co.'s No. 1 Slaughter, near C of Labour 53, League 149, Randall Co. School Lands.
Derrick

COKE COUNTY

Haggerty et al's No. 1 Gaston, 340 ft. from S and 654 ft. from W, Sec. 11, Jos. Young Sur. (old well deepening).
Cleaning out; T.D. 2,640 ft.

CRANE COUNTY

Cranfill Bros.' No. 1 Tubbs, 330 ft. from S and W of Sec. 11, Blk. B-27, P.S.L. Sur.
Moving in material.

Gulf Prod. Co.'s No. 1 M. B. McKnight, 660 ft. from S and W, Sec. 9, Blk. B-21.
Moving in machine.

Gulf Prod. Co.'s No. 1 Waddell, C NW NW Sec. 4, Blk. B-27, P.S.L. Sur.
Drlg. 3,588 ft., gray lime.

Gulf Prod. Co.'s No. 9 Waddell, C of NE. Sec. 11, Blk. B-23, P.S.L. Sur.
Drlg. 3,480 ft., lime and flowing by heads.

Wahlenmaier Pet. Corp.'s No. 1 Kloh, 330 ft. from S and 1,609 ft. from W, Sec. 33, Blk. 44, Twp. 3s, T.&P. Sur.

(Continued on Page 43)

W. D. Johnson, total depth 2,546 feet, top pay 2,335 feet, treated with acid, initial production 135 bbls. oil per day. J. F. Provine and others (formerly Bradford & Green) No. 2 Carson, total depth 2,196 feet, top pay 2,135 feet, shot with 90 quarts from 2,136-96 feet, initial production 141 bbls. oil per day. Gulf Production Co.'s No. 37 Hutchins, total depth 2,752 feet, top pay 2,680 feet, shot with 170 quarts from 2,580-2,720 feet, initial production 257 bbls. oil per day flowing through tubing with 565,000 feet gas daily; No. 52 O'Brien, total depth 3,100 feet, plugged back to 3,037 feet, top pay 2,614 feet, initial production 13 bbls. oil per day swabbing and 396,000 feet gas daily. Tex-Mex Petroleum Co.'s No. 4 Llano-Owen, total depth 3,035 feet, top pay 2,445 feet, main pay 2,985-3,005 feet, shot with 150 quarts from 2,985 to 3,027 feet, initial production 319 bbls. oil per day pumping.

Winkler County

J. J. Jefferies and others' No. 1 Underwood (old well supposed to have been deepened; old total depth 780 feet; did not deepen), abandoned at total depth of 780 feet.

WICHITA FALLS COMPLETIONS

Archer County

Bridwell Oil Co.'s No. 6-A Falls, total depth 1,235 feet, dry and abandoned. Cullum & Alexander's No. 15 Falls, total depth 1,127 feet, pay 1,103-27 feet, initial production 55 bbls. Fain-McGaha Oil Corp.'s No. 1 J. H. Turberville, total depth 1,512 feet, dry and abandoned. Milroy Production Co. (formerly W. J. Frarley and others) No. 3-B H. O. Prideaux, total depth 648 feet, pay 635-48 feet, initial production 15 bbls. Fresno Oil Co.'s No. 20 H. O. Prideaux, total depth 728 feet, dry and abandoned. Gray Drilling Co.'s No. 1 H. Wilmut, total depth 660 feet, dry and abandoned. Hamer & Scholl's No. 11 Longley estate, total depth 968 feet, pay 964-68 feet, initial production 50 bbls.

Perkins & Cullum's No. 143 falls, total depth 1,146 feet, pay 1,130-46 feet, initial production estimated 60 bbls.; No. 144 Falls, total depth 1,194 feet, pay 1,176-94 feet, initial production estimated 125 bbls.; No. 146 Falls, total depth 1,147-56 feet, initial production estimated 50 bbls. Petroleum Producers' No. 13 Harmonson estate, total depth 971 feet, pay 964-69 feet, initial production 10 bbls. Texas Co.'s No. 1-B Rhome, total depth 1,279 feet, dry and abandoned.

Cooke County

McKessie & Reese's No. 1 A. R. Riddle, total depth 3,109 feet, dry and abandoned.

Jack County

Brazos River Gas Co.'s No. 3 York estate, total depth 2,943 feet, pay 2,918-27 feet, initial production 40 bbls. Ford & Stewart's No. 1 R. H. Massey, total depth 120 feet, abandoned. Miller and others' No. 1 D. M. Spearman, total depth 560 feet, dry and abandoned.

Montague County

O. V. Beck's No. 12 Davenport and others, total depth 2,400 feet, plugged back to 1,660 feet, pay 1,652-55 feet, initial production 72 bbls. oil and 45 bbls. water; No. 13 C. L. Davenport and others, total depth 1,707 feet, pay 1,700-07 feet, initial production 150 bbls.

Throckmorton County

Humble Oil & Refining Co.'s No. 1-A J. T. Davis, total depth 578 feet, temporarily abandoned; No. 2-A J. T. Davis, total depth 567 feet, temporarily abandoned. A. B. Swain and others' No. 1 A. C. Daws, total depth 1,000 feet, dry and abandoned.

Wichita County

L. T. Burns' No. 14 First National Bank, abandoned location. Burns & Long's No. 25-D Allen & Kemp, total depth 1,645½ feet, pay 1,635-1,642 feet, initial production 10 bbls. C. W. Clark and others' No. 6-B Allen & Kemp, total depth 1,241 feet, pay 1,235-41 feet, initial production 50 bbls. C. W. Clark and others' No. 6-B Allen & Kemp, total depth 1,241 feet, pay 1,235-41 feet, initial production 50 bbls. George W. Cooper's No. 28 J. and J. Waggoner, total depth 1,901 feet, dry and abandoned. Fresno Oil Co.'s No. 22 L. F. Ramming, total depth 1,865 feet, dry and abandoned.

Golding & Cochran's No. 14-A J. and J. Waggoner, total depth 1,450 feet, dry and abandoned; No. 11-C J. and J. Waggoner, total depth 1,320 feet, top pay 1,315-20 feet, initial production 25 bbls.; No. 13-C J. and J. Waggoner, total depth 295 feet, pay 280-295 feet, initial production 2 bbls. Humble Oil & Refining Co.'s No. 27 W. H. Taylor, total depth 840 feet, pay 836-840 feet, initial production 14 bbls. oil and 3 bbls. water in 15 hours. Lambert & Stump's No. 1 Munger Brothers, total depth 3,883 feet, pay 3,715-3,883 feet, initial production 60 bbls.

Panhandle Refining Co.'s No. 2-A First National Bank, total depth 476 feet, dry and abandoned; No. 3-A First National Bank, total depth 565 feet, dry and abandoned. Petroleum Producers' No. 69 Allen & Kemp, total depth 1,753 feet, pay 1,749-53 feet, initial production 75 bbls. Shappell Oil Co.'s No. 1 W. L. Hodges, total depth 1,897 feet, dry and abandoned. J. L. Swanner's No. 9-B Parker, total depth 1,263 feet, pay 1,256-63 feet, initial production 4 bbls.

Wilbarger County

James B. Baker, Inc.'s No. 1-A Waggoner estate, total depth 1,926 feet, dry and abandoned.

Young County

James B. Baker and others' No. 6 O. S. Perkins, total depth 740½ feet, pay 732-40½ feet, initial production 100 bbls. Cato Brothers' No. 4 G. B. Hamilton estate, total depth 895 feet, pay broken 848-895 feet, initial production 250 bbls. Hedrick-Camp and others' No. 2 Peters heirs, total depth 760 feet, dry and abandoned. King Royalty Corp.'s No. 2 J. D. Lowe, total depth 720 feet, dry and abandoned.

W. Krause and others' No. 1 Trueheart heirs, total depth 551 feet, dry and abandoned. Rathke Oil Co.'s No. 7 C. E. Graham, total depth 910 feet, dry and abandoned. Texas Co.'s No. 5-B Finch estate, total depth 750 feet, plugged back to 674 feet, pay broken 650-674 feet, initial production 12 bbls. E. D. Willis and others' No. 1 E. M. Remington, total depth 705 feet, dry and abandoned. D. L. Wolf and others' No. 1 W. E. Baker, total depth 490 feet, dry and abandoned.

PANHANDLE COMPLETIONS

Carson County

Dixon Creek Oil & Refining Co.'s No. 1-E McConnell, Section 201, Block 3, I. &G.N. Survey, total depth 2,670 feet, top pay 2,375 feet, initial production 40,000,000 feet of gas daily. Hagey, Harrington & Marsh's No. 3 Bernhard, Section 23, Block 4, I.&G.N. Survey, total depth 2,731 feet, top pay 2,435 feet, shot with 300 quarts from 2,435-2,700 feet, initial production 37,000,000 feet of gas daily. Phillips Petroleum Co.'s No. 1 Cooper, Section 4, Block 9, I.&G.N. Survey, total depth 3,055 feet, top pay 3,018 feet, shot with 200 quarts from 3,008-52 feet, initial production 277 bbls. per day, pumping. Texas Co.'s No. 5 Quinn, Section 7, Block 9, I.&G.N. Survey, total depth 3,105 feet, top pay 3,065 feet, shot with 180 quarts from 3,030-3,105 feet, initial production 282 bbls. per day, pumping.

Collingsworth County

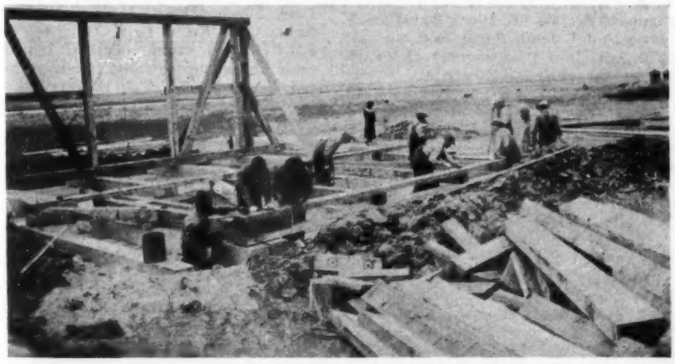
Anderson & Kerr's No. 1 Gideon-Bell, Section 6, Block 13, H.&G.N. Survey, total depth 2,216 feet, dry and abandoned.

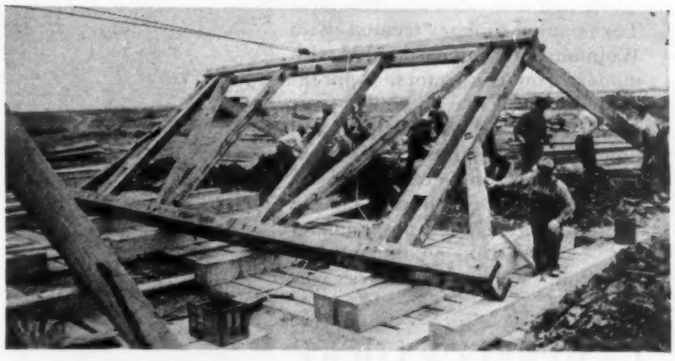
Gray County

Claude Drilling Co.'s No. 3 Byrum, Section 188, Block 3, I.&G.N. Survey, total depth 3,294 feet, top pay 3,150 feet, shot with 500 quarts from 3,118-3,294

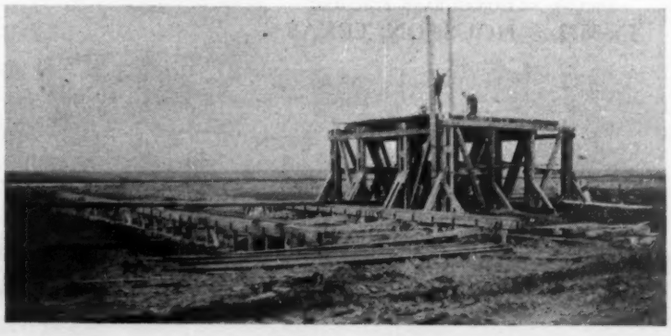
PROPER GRADE *of* LUMBER *plus* MODERN RING CONNECTORS

have brought engineering advancement to timber structures





Upper Left: Assembling truss. Above: Raising truss into position. Below: Structure complete and starting up with derrick legs.



The natural advantages of timber have become more widely available through engineering advancement such as Ring Connectors (the modern construction method).

Use of the proper grade of structural timber, according to Southern Pine grading rules (subject to inspection at the mill) assures use of timber of proper strength. Users are now dealing with known fibre stresses in designing timber structures, and timber structures now have the salient features of engineering control of design and materials used.

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We maintain a technical staff upon which the operator is invited to call for assistance or advice on any engineering problem pertaining to construction.

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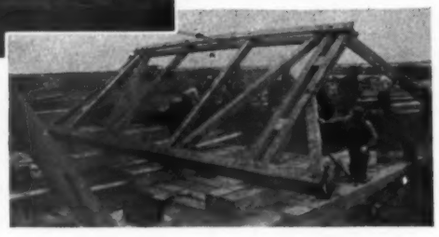

● **ABOVE: Fabricating trusses at treating plant—eliminates cutting and fitting in the field.**

● **RIGHT: Raising assembled truss into position on location of The Texas Corporation.**

This lumber, a raw product, was cut in our plant to correct sizes, was bored and grooved for bolts and rings. A check assembly was made to assure easy erection in the field without requiring the services of skilled labor to cut and fit. The structure was then dismantled and pressure treated with Wolman Salts. We also have facilities for treating with any approved preservative, such as chloride of zinc or creosote oil.

WE CARRY LARGE STOCKS OF CREOSOTED POLES, PILING AND SAWN TIMBERS.

NATIONAL LUMBER & CREOSOTING CO.
SHELL BUILDING, HOUSTON, TEXAS
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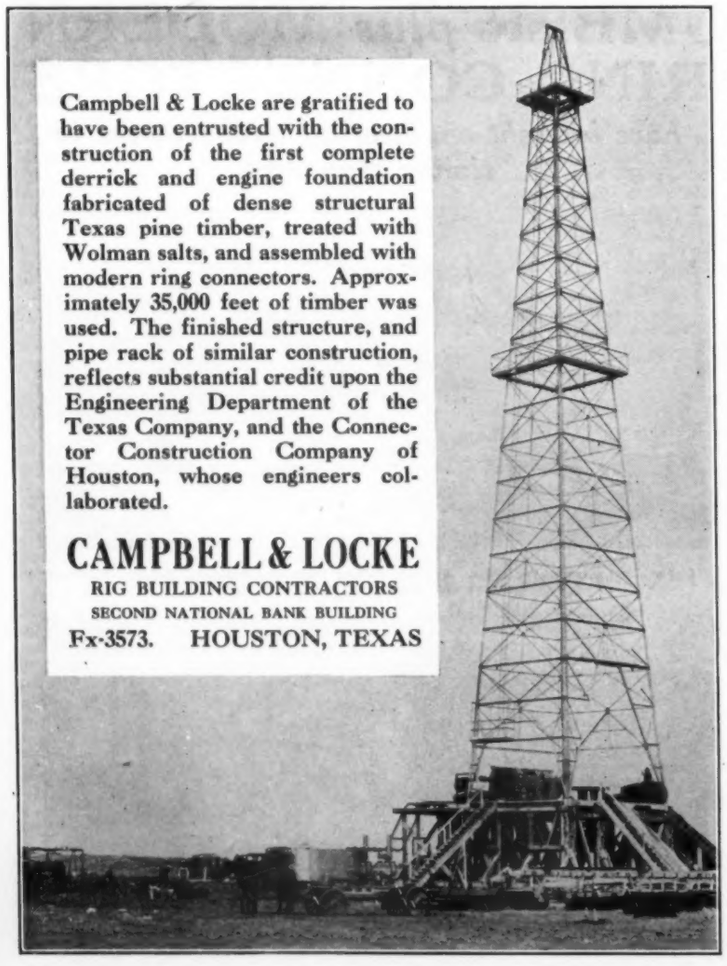


Campbell & Locke are gratified to have been entrusted with the construction of the first complete derrick and engine foundation fabricated of dense structural Texas pine timber, treated with Wolman salts, and assembled with modern ring connectors. Approximately 35,000 feet of timber was used. The finished structure, and pipe rack of similar construction, reflects substantial credit upon the Engineering Department of the Texas Company, and the Connector Construction Company of Houston, whose engineers collaborated.

CAMPBELL & LOCKE
RIG BUILDING CONTRACTORS
SECOND NATIONAL BANK BUILDING
Fx-3573. HOUSTON, TEXAS

feet, initial production 287 bbls. per day, pumping. Shell Petroleum Corp.'s No. 3 Finley, Section 17, B. E. Cheney Survey, total depth 3,097 feet, top pay 3,030 feet, shot with 120 quarts from 3,035-97 feet, initial production 223 bbls. pumping per day. Skelly Oil Co.'s No. 1 Saunders "B," Section 12, Block A-6, H.&G.N. Survey, total depth 2,848 feet, shot with 240 quarts from 2,765-2,842 feet, initial production 101 bbls. per day, pumping; No. 23 East Shafer, Section 172, Block 3, I.&G.N. Survey, total depth 3,285 feet, top pay 3,145 feet, shot with 360 quarts from 3,153-3,278 feet, initial production 401 bbls. per day, pumping. Stanolind Oil & Gas Co.'s No. 7 Cobb "C," Section 165, Block 3, I.&G.N. Survey, total depth 3,328 feet, top pay 3,246 feet, shot with 210 quarts from 3,235-3,322 feet, initial production 145 bbls. pumping per day; No. 5 William Jackson, Section 90, Block B-2, H.&G.N. Survey, total depth 3,125 feet, top pay 2,957 feet, initial production 41 bbls. per day, pumping. Texas Co.'s No. 2 Barrett, Section 112, Block 3, I.&G.N. Survey, total depth 3,265 feet, top pay 3,200 feet, shot with 240 quarts from 3,188-3,250 feet, initial production 164 bbls. per day, pumping; No. 6 McCarty-Lester "B," Section 10, Block 1, A.C.H.&B. Survey, total depth 3,038 feet, dry and abandoned.

Hutchinson County

Phillips Petroleum Co.'s No. 4 Yake, Section 36, Block 47, H.&T.C. Survey, total depth 2,892 feet, top pay 2,858 feet, was treated with acid, initial production 41 bbls. of oil and 20 bbls. of water per day, pumping. Harry Steckoll's No. 6 Whittenburg "B," Section 89, Block Z, G.C.&S.F. Survey, total depth 3,075 feet, top pay 2,975 feet, shot with 100 quarts from 2,987-3,075 feet, initial production 250 bbls. per day, pumping. H. J. Wasson, trustee's No. 4 Watkins, Section 13, Block M-21, T.C.R.R. Survey, total depth 3,024 feet, top pay 2,940 feet, shot with 360 quarts from 2,940-3,024 feet, initial production 242 bbls. per day, pumping.

Wheeler County

Lefors Petroleum Co.'s No. 1 Perkins, Section 54, Block 24, H.&G.N. Survey, total depth 2,530 feet, dry and abandoned. N. H. Martin & Son's No. 1 Plummer, Section 45, Block 24, H.&G.N. Survey, total depth 2,640 feet, top pay 2,270 feet, initial production 11,500,000 feet of gas daily. Rafferty and others' No. 1 Seawright, Section 62, Block 13, H.&G.N. Survey, abandoned test, total depth 485 feet. Remo Oil Co.'s No. 1 Mankins, Section 54, Block 13, H.&G.N. Survey, total depth 2,216 feet, initial production 50 bbls. of oil and 10 bbls. of water per day, pumping. Skelly Oil Co.'s No. 12 Derrick, Section 53, Block 24, H.&G.N. Survey, total depth 2,498 feet, top pay 2,431 feet, initial production 132 bbls. per day, pumping. Smith Brothers' No. 6 Harlan, Section 49, Block 24, H.&G.N. Survey, total depth 2,529 feet, top pay 2,450 feet, initial production 998 bbls. per day, pumping. Texas Co.'s No. 2 Bush, Section 48, Block 24, H.&G.N. Survey, total depth 2,500 feet, top pay 2,344 feet, initial production 985 bbls. of oil, pumping, with 6,800,000 feet of gas daily; No. 4 Carwile, Section 51, Block 24, H.&G.N. Survey, total depth 2,533 feet, top pay 2,465 feet, initial production 461 bbls. per day, pumping. Underwood and others' No. 1 Roach, Section 27, Block 24, H.& G.N. Survey, total depth 2,139 feet, top pay 2,030 feet, initial production 53,000,000 feet of gas per day.

East Texas Fields

(Continued from Page 38)

Refining Co.'s No. 11 W. D. Peterson, top sand 3530 feet, total depth 3,628 feet, initial production 20 bbls. an hour. E. M. Jones & Reserve's No. 7 Hindman, top sand 3,650 feet, total depth 3,662 feet, initial production 112 bbls. an hour. Magnolia Petroleum Co.'s No. 10 Ben Laird, top sand 3,604 feet, total depth 3,635 feet, initial production 90 bbls. an hour.

Meco Production Co.'s No. 3 Russell, top sand 3,668 feet, total depth 3,669 feet, initial production 20 bbls. an hour. Yandle Rogers' No. 1 C. N. Dickerson, top sand 3,583-3,600 feet, total depth 3,627 feet, shale, initial production, pumping, 25 bbls. an hour; No. 2 H. Sexton, top sand 3,598-3,631 feet, total depth 3,668 feet, shale, initial production 30 bbls. an hour, 2½-inch. tubing. J. I. Smith's No. 2 L. Morse, top sand 3,568 feet, total depth 3,618 feet, initial production 30 bbls. in 30 minutes. Stanolind & Noble's No. 6 N. B. King, top sand 3,686 feet, total depth 3,754 feet, initial production 32 bbls. in 32 minutes. Wheelock & Collins' No. 20 D. Wells, top sand 3,620 feet, total depth 3,641 feet, initial production 75 bbls. an hour.

Atlantic's No. A-13 Pinkston, top sand 3,634 feet, total depth 3,666 feet, initial production 98 bbls. an hour; No. 7-C Pinkston, top sand 3,632 feet, total depth 3,677 feet, initial production 60 bbls. an hour; No. D-9 Pinkston, top sand 3,606 feet, total depth 3,666 feet, initial production 30 bbls. an hour; No. D-10 Pinkston, top sand 3,589 feet, total depth 3,651 feet, initial production 90 bbls. an hour. W. E. Brown and others' No. 3 W. H. Frederick, top sand 3,526 feet, total depth 3,610 feet, initial production, swabbing, 100 bbls. in four hours. E. C. R. Oil Co.'s No. 1 Frederick, top sand 3,538 feet, total depth 3,630 feet, shale, initial production 20 bbls. hour, pumping. Delta Drilling Co.'s No. A-5 J. H. Henson, top sand 3,505 feet, total depth 3,564 feet, shale, initial production, pumping, 20 bbls. an hour. Duncan & Holt's No. 2 J. P. Cansler, top sand 3,735 feet, total depth 3,795 feet, initial production 80 bbls. an hour.

Great States Oil Co.'s No. 3 M. Smith, top sand 3,613 feet, total depth 3,634 feet, sandy shale, initial production pumping 20 bbls. an hour.

Gulf Production Co.'s No. 9 Maxwell, top sand 3,747 feet, total depth 3,755 feet. initial production 55 bbls. an hour, three-quarters inch choke; No. A-8 A. H. Rayford, top sand 3,735 feet, total depth 3,742 feet, initial production 60 bbls. an hour, three-quarters inch choke; No. 15 J. W. Shaw, top sand 3,734 feet, total depth 3,742 feet, initial production 60 bbls. per hour; No. 6-A W. Shaw, top sand 3,744 feet, total depth 3,755 feet, hard sand, initial production 30 bbls. an hour, 2-inch tubing. Humble Oil & Refining Co.'s No. 6 E. S. Holt, top sand 3,734-78 feet, total depth 3,784 feet, shale, initial production 82 bbls. an hour.

J. Jackson's No. 1 J. L. Maxwell, top sand 3,755 feet. Sinclair Prairie's No. 17 F. W. Wilson, top sand 3,655 feet, total depth 3,665 feet, initial production 45 bbls. in 15 minutes, 2½-inch tubing. Arcadia Oil Co.'s No. A-10 J. R. Green, top sand 3,724 feet, total depth 3,728 feet, initial production 30 bbls. in 30 minutes, 2-inch tubing. Stanley-Lewis' No. 3 T. O. Wright, top sand 3,706 feet, total depth 3,710 feet, initial production 100 bbls. an hour. Sinclair Prairie's No. 26 D. Wright, top sand 3,727 feet, total depth 3,731 feet, initial production 40 bbls. in 15 minutes, 2½-inch tubing.

Upshur County

C. G. Glasscock's No. 5 J. B. Webb, top sand 3,691 feet, total depth 3,697 feet, initial production 35 bbls. in 15 minutes. Humble Oil & Refining Co.'s No. 9 A. J. Watkins, top sand 3,675 feet, total depth 3,695 feet, initial production 91 bbls. an hour. Kleiner-Warren-Osteim's No. 6 O. S. Smith, top sand 3,643 feet, total depth 3,651 feet, initial production 110 bbls. an hour, 2-inch tubing. Magnolia Petroleum Co.'s No. 18 J. W. Free, top sand 3,655 feet, total depth 3,669 feet, initial production 20 bbls. in 15 minutes, 2-inch choke. Pace & Mitcham's No. 6 Adkins, top sand 3,766 feet, total depth 3,783 feet, initial production 30 bbls. an hour. H. Russell's No. 1 S. C. Salter, top sand 3,766 feet, total depth 3,771 feet, initial production 30 bbls. an hour by heads. Simms & Russ' No. 14 J. J. Flewellen, top sand 3,741 feet, total depth 3,747 feet, initial production 30 bbls. in 25 minutes, 2½-inch tubing. Southland Drilling Co.'s No. 2 D. C. Shelton, top first sand 3,737 feet, top second sand 3,743 feet, total depth 3,746 feet, initial production 51 bbls. an hour through casing.

West Texas Wildcats

(Continued from Page 40)

T.D. 3,325 ft.; set 7-in. csg. at 3,120 ft.; drlg. plug.

CROCKETT COUNTY

Eppenauer Drlg. Co.'s No. 1-C Powell, 1,600 ft. from S and 250 ft. from E, Sec. 53, Blk. B.B.
Fishing 1,565 ft.; elev. 2,665 ft.

Leslie-Hiller et al's No. 1 Todd, 1,200 ft. N and 330 ft. E, Sec. 26, Blk. WX, G.C.& S.F. Sur.
S.D. 580 ft.

Humble Oil & Ref. Co.'s No. 1 Couch, C NW Sec. 3, Blk. QR, G.C.&S.F. Sur.
Temporarily abnd. 1,581 ft.; elev. 2,538 ft.

CULBERSON COUNTY

Anderson-Pritchard Oil Corp., Magnolia Pet. Co. et al's No. 1 Borders, 1,255 ft. N and 2,305 ft. from W, Sec. 34, Blk. 69, P.S.L. Sur.
Drlg. 1,119 ft., black lime.

Miller Bros.' No. 1 Lee, 1,900 ft. from N and 660 ft. from E line of Sec. 21, Blk. 97, P.S.L. Sur.
T.D. 2,107 ft., sand; ran 6-in. csg. and S.D. for orders.

Wood et al's No. 1 Hall, 250 ft. from S and 85 ft. from E, Sec. 11, Blk. 54½, 16 miles N of Van Horn, P.S.L. Sur.
S.D. 246 ft.

DAWSON COUNTY

Adams & Turner's No. 1 John Robinson, 1,320 ft. from N line, 1,320 ft. from W line of Sec. 46, Blk. M, E.L.R.R. Sur.
Elev. 3,078 ft.; drlg. 4,290 ft., lime.
Drlg. 4,290 ft., lime.

ECTOR COUNTY

Atlantic Oil Prod. Co.'s No. 1 T. P. Land Trust, 440 ft. from N and W of SE Sec 11, Blk. 43, Twp. 1s, T.&P. Sur.
T.D. 4,391 ft.; plugged back to 4,300 ft.; Shot 380 qts. 4,175-4,300 ft.; cleaning out after shot.

Callahan et al's No. 1 Connell, 330 ft. from N and 990 ft. from W, Sec. 10, Blk. 30, Twp. 1s.
Drlg. 2,460 ft.; air pocket at 1,790 ft.

Empire Gas & Fuel Co.'s No. 1 Cummins, 440 ft. from S and E, Sec. 10, Blk. 45, Twp. 1n, T.&P. Sur.
Rigged up.
Drlg. 580 ft.

G. Farley's No. 1 Connell, 990 ft. from S and 330 ft. from E, Sec. 11, Blk. B-16, P.S.L. Sur.
T.D. 3,668 ft.; shot 400 qts. 3,482-3,668 ft.; flowed 162½ bbls. first 24 hrs. after shot.

Gulf Prod. Co.'s No. 1 Goldsmith, C of NW, Sec. 10, Blk. 44, Twp. 1s, T.&P. Sur.
Drlg. 1,535 ft.

International Pet. Corp.'s No. 1 Cowden, 660 ft. from S and E, Sec. 25, Blk. 44, Twp. 2s, T.&P. Sur.
Drlg. 3,535 ft.

Landreth Prod. Co.'s No. 1 Clarence Scherbauer, 660 ft. from S and E lines of Sec. 20, Blk. 44, Twp. 1n, T.&P. Sur.
T.D. 4,236 ft.; plugged back to 4,186 ft.; S.D.

Landreth Prod. Co.'s No. 1-B O. B. Holt, 660 ft. from N and 1,980 ft. from E lines of Sec. 19, Blk. "A," P.S.L. Sur.
Location.

Landreth Prod. Co.'s No. 1 Cowden Heirs, 440 ft. from S and W, Sec. 18, Blk. 44, Twp. 1n, T.&P. Sur.
Drlg. 300 ft.

Penrose et al's No. 1 Kloh & Rumsey, 2,310 ft. from S and E, Sec. 31, Blk. 45, Twp. 1s, T.&P. Sur.
Elev. 3,154 ft.; T.D. 3,217 ft.; S.D. for repairs.

Phillips Pet. Co.'s No. 1 Scharbauer, 990 ft. from S and 330 ft. from E, Sec. 16, Blk. B-15.
Drlg. 3,725 ft.; about 250,000 ft. gas from 3,494-3,502 ft.

EL PASO COUNTY

Tri-State Oil Co.'s No. 1 Kinkel, 190 ft. from N and 550 ft. from E, Sec. 237, A.T.&S.F Sur.
Ready to spud.

FISHER COUNTY

Merry Bros. and Perrini's No. 1 Howard, 1,320 ft. from N and 660 ft. from E, Sec. 186, Blk. 2, H.&T.C. Sur.
T.P. 3,665 ft.; T.D. 3,679 ft.; plugged back to 3,675 ft.; pumped 135 bbls. oil and 210 bbls. water in 24 hours.

GARZA COUNTY

N. L. Richards' No. 1 Sullivan, 330 ft. from N and W, Sec. 3, Blk. 5, K. Aycock Sur. Location.

GLASSCOCK COUNTY

Capitan O. Co.'s No. 1 Gilliam, 2,310 ft. from S and 1,980 ft. from E, Sec. 21, Blk. 35, Twp. 2s, T.&P. Sur.
Elev. 2,610 ft.; drlg. 1,881 ft.

John L. Moore et al's No. 1 McDowell, 2,310 ft. from S and 2,397 ft. from E, Sec. 21, Blk. 34, Twp. 2s, T.&P. Sur.
Drlg. 1,432 ft.

John L. Moore et al's No. 1 J. S. McDowell, 1,980 ft. from N line and 660 ft. from E line of Sec. 22, Blk. 34, Twp. 2s, T.&P. Sur.
T.D. 9,520 ft.; topped lime 9,471 ft.; show oil and gas 9,484-9,520 ft.; cmtd. 7⅝-in. csg. at 9,470 ft.; drilled plug and bailed down to 6,100 ft. without increase in oil or gas.

HOWARD COUNTY

Dorn et al's No. 1 Kloh, 330 ft. from S and E, Sec. 45, Blk. 30, Twp. 1n, T.&P. Sur.
Elev. 2,287 ft.; drlg. 2,050 ft.; topped lime 1,720 ft.

C. Henson et al's No. 1 B. Scott, 330 ft. from N and 1,650 ft. from E, Sec. 93, Blk. 29, T.&P. Sur.
T.D. 1,254 ft.; underreaming 5-in. csg.

Slagel's No. 1 Foster, 990 ft. from S and 330 ft. from W, Sec. 43, Blk. 29.
T.D. 690 ft.; running 10-in. csg.

IRION COUNTY

Lowe, Delaney et al's No. 5 Nutt, 490 ft. from N and E of SW¼ Sur. 6, Gonzales County School Lands.
T.D. 880 ft.; shut down.

JEFF DAVIS COUNTY

C. M. Joiner's No. 1 Jones & Coffield, 770 ft. from N and 1,322 ft. from E, Sec. 8, Blk. 3, H.&T.C. Sur.
Drlg. 730 ft.

JONES COUNTY

Campbell et al's No. 1 Rowell, in E half of W half, Sec. 6, T.&P. Sur.
T.D. 950 ft.; fishing drill pipe.

Campbell et al's No. 1 Enevill, 1,400 ft. from N and 370 ft. from W, Sec. 2, M.E.&P. Sur., ½ mile S of Anson.
T.D. 2,050 ft.; running 6-in. csg.

Cal-Tex Oil Co.'s No. 1 Smith, 1,400 ft. from S and 2,000 ft. from E, Sec. 25, Blk. 19, T.&P. Sur.
Drlg. 1,900 ft., lime.

Fondran Prod. Co.'s No. 1 S. R. Cox Jr., 200 ft. from S and 3,700 ft. from E, Sec. 74, Blk. 14, T.&P. Sur.
Drlg. 1,000 ft., lime.

Dr. C. E. Johnson's No. 1 Young, 1,800 ft. from N and 750 ft. from W of SE 290 acres of B. Travenio Sur.
T.D. 1,610 ft.; running 6-in. csg.

Owen et al's No. 1 Johnson & Dunwoody, 3,750 ft. from S and 330 ft. from W, Sec. 6, Blk. 17, T.&P. Sur.
Spudded and S.D.

Richards et al's No. 1 Ransom, 200 ft. from N and E, Sec. 244, B. M. Clopton Sur.
S.D. 750 ft.

T. O. Shappell's No. 1 Stevenson, 150 ft. from N and 2,411 ft. from W, Sec. 7, Blk. 16, T.&P. Sur., 7 mi. SW of Hawley.
Drlg. 780 ft.

T. K. Simmons' No. 1 T. M. Harrell, 200 ft. from S and 1,050 ft. from E of Sec. 7, Orphan Asylum Lands.
T.D. 1,470 ft.; running 8¼-in. csg.

United Producers No. 1 T. P. Wood, 1,000 ft. from N and 450 ft. from W lines of farm, B. Traverino Sur. No. 190.
Drlg. 720 ft., shale.

LOVING COUNTY

D. C. Evans' No. 1 W. D. Johnson, 2,310 ft. from N and 1,650 ft. from W, Sec. 12, Blk. 57, Twp. 1, T.&P. Sur.
S.D. 2,030 ft.

Mason Oil Co.'s No. 1 Kyle, 1,980 ft. from S and E, Sec. 22, Blk. 55, Twp. 1, T.&P. Sur.
T.D. 495 ft., quicksand; jarring on tools.

LYNN COUNTY

Hart Oil Co.'s No. 1 Edwards, 220 ft. from N and 200 ft. from W of SE Sec. 29, L.&S.V. Sur.
Elev. 3,112 ft.; S.D. 3,980 ft.

MARTIN COUNTY

Wright & Scott's No. 1 Flannigan, 330 ft. N and E, Sec. 22, Blk. 37, Twp. 1s, T.&P. Sur.
S.D. 100 ft.

MITCHELL COUNTY

Sawtell & Grueber's No. 1 Morrison
S.D. 1,020 ft.

McCULLOCH COUNTY

Cardinal Oil Co.'s No. 4 White Baker, 270 ft. from N and 1,963 ft. from E, Dewey Sur.
Location.

Goggins' No. 1 Craven Estate, 1,390 ft. from S and 2,480 ft. from W, Gus Dreiss Sur.
S.D. 735 ft., lime.

Honea et al's No. 1 Cox, 450 ft. from S and 150 ft. from E, David Pope Sur.
S.D. 846 ft., black shale.

Miller et al's No. 1 Black, 160 ft. from N and 175 ft. from E, Sur. 290, H.&T.C. Sur., 3 miles E of Placid.
S.D. 605 ft.

Geo. Poulter et al's No. 1 J. R. Hall, 2,600 ft. from SE and 200 ft. from E, Sec. 192, State Sur., 12½ miles N of Brady.
Drlg. 590 ft., shale.

Skaggs & Brewer's No. 1 Dunn, 190 ft. from S and 570 ft. from E, Sec. 951, T. L. Hartig Sur.
Drlg. 705 ft., sand; flowing fresh waetr at 639 ft.

PECOS COUNTY

Cardinal Oil Co.'s No. 1 White & Baker, 2,310 ft. from S and 330 ft. from W, Sec. 51, Blk. Z, T.C. Sur.
Drlg. 1,570 ft., anhydrite.

Gulf Prod. Co.'s No. 5 White & Baker, 330 ft. from N and E lines of Sec. 88, Blk. 194, G.C.&S.F. Sur.
Location

International Pet. Co.'s No. 1 White & Baker, 2,310 ft. from S and 330 ft. from E, Sec. 4, Blk. 207, T.C. Ry. Sur.
T.D. 620 ft.; underreaming 10-in. csg.

Messenger's No. 1 Dr. Sibley, 4,930 ft. from S and 990 ft. from W, Sec. 6, Blk. 9, H.&G.N. Sur.
Location.

Trans-Tex. Oil Co.'s No. 1 Caldwell, 330 ft. from E line and 330 ft. from S line of Sec. 27, Blk. 40, Twp. 9, T.&P. Sur.
S.D. 1,680 ft. for csg.

REAGAN COUNTY

Byrd-Frost Inc.'s No. 1 Boyd, 1,320 ft. from S and E of Sec. 6, Blk. E, L.V.S.&V. Sur.
Drlg. 100 ft., red shale.

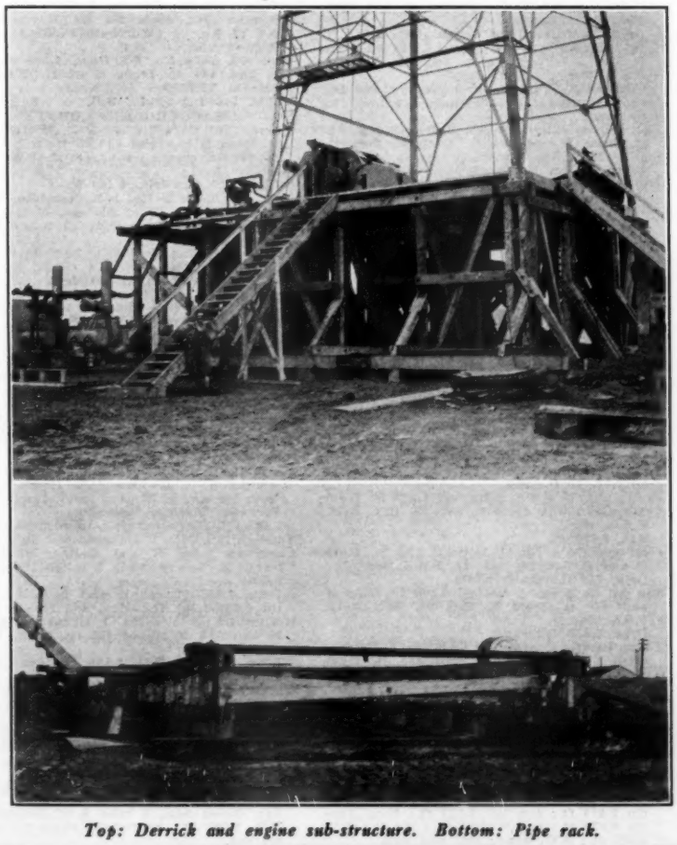
Dobbs' No. 1 Friend, 2,310 ft. from S and 660 ft. from W of Blk. 3, Wm. Allen Sur., 3 or 4 miles S of Big Lake.
Drlg. 1,120 ft., lime.

Skelly Oil Co.'s No. 1-D H. S. Grayson, 1,980 ft. from N line and 660 ft. from W line of Sec. 33, Blk. 3, University Land Sur.
Drlg. 9,665 ft., white lime; cored lime 9,614-28 ft.; no show.

REEVES COUNTY

J. E. Cunningham's No. 1 Altman, 2,310 ft. from N line and 1,980 ft. from E line of Sec. 1, C. C. Wyatt Sur.
Drlg. 3,745 ft., lime; gas from 3,658-62 ft.

There's 100% Salvage in These Sub-structures



Top: Derrick and engine sub-structure. Bottom: Pipe rack.

Using 35,000 board feet of dense structural Texas pine, WOLMANIZED for long life, fire retarding and anti-rot, The Texas Corporation has constructed through use of the MODERN RING CONNECTORS the latest and most practical thing in derrick and engine sub-structures and pipe rack known to the industry.

The derrick sub-structure, erected on a 40′ square mat, is16′ high and provides complete safety under a *one million-pound load.* It is carrying a 136′ steel derrick of 650,000 (safe load) capacity.

The structure is designed for quick erection and dismantling, and allows 100% salvage. Ring Connectors hold vibration to a new minimum. This construction allows use of 100% shock overloading and natural resilience of wood. Engine sub-structure is tied into derrick sub-structure with Ring Connectors, giving it the strength and rigidity of an integral structure.

These sub-structures are highly portable in standard sizes, trusses being designed to come apart in sections.

The location, near Freeport, Brazoria County, Texas, is scheduled to go 8,500′.

Details on standard structures available upon request. Special structures of all kinds designed to meet special conditions.

For information see your nearest Houston Oil Field Material Company store.

CONNECTOR CONSTRUCTION CO.
1524 MAURY STREET
HOUSTON, TEXAS

Herbert Oil Co.'s No. 1 Williams & Walker, 5,280 ft. from S and 1,320 ft. from E, Sec. 17, Blk. 6, H.&G.N. Sur.
Spudded and S.D.
K. Slack et al's No. 1 Reeves, 1,980 ft. from N and W, Sec. 20, Blk. 56, P.S.L. Sur.
Location.

RUNNELS COUNTY

Dennis et al's No. 1 Wash, 550 ft. from N and 560 ft. from E of W half, Sec. 133, E.T.R.R. Sur.
Spudded and S.D.
Melrose Oil Co.'s No. 1 L. P. Woods, 150 ft. from NE lines and 3,475 ft. from W line of survey, Willett Holmes Sur. No 106.
S.D. 2,507 ft.
R. Wells' No. 1 James, 396 ft. from N and 330 ft. from E of James tract in Sec. 16, D. Diaz Sur.
S.D. 1,100 ft.

SCHLEICHER COUNTY

John M. Cooper et al's No. 1 Bert Page, 1,320 ft. from N line, 1,470 ft. from W line of Sec. 40, Blk. L, G.H.&S.A. Sur.
T.D. 5,987 ft.; shut down.
W. C. Proctor et al's No. 1 Judkins & Spencer, 1,320 ft. from S and W of W. W. Russell grant.
Moved off tools.

SCURRY COUNTY

Coffield & Guthrie's No. 1 Holliday, 2,310 ft. from N and 330 ft. from W, Sec. 130, Blk. 97, H.&T.C. Sur.
T.D. 2,697 ft.; plugged back to 2,075 ft.; shut down.
McLaughlin's No. 1 Allen, 1,331 ft. from N and 1,338 ft. from E, Sec. 298, Blk. 97.
T.D. 500 ft.; running 12½-in. csg.

STERLING COUNTY

Merry Bros. & Perrini's No. 1 Standsberry, 1,980 ft. from N and E, Sec. 20, Blk. 36, W.&N.W. Sur.
Drlg. 2,847 ft., lime.

STONEWALL COUNTY

Merry Bros. and Perrini et al's No. 1 Williams, C SW of SW Sec. 6, Blk. C, A.B &M. Sur.
S.D. 3,000 ft.

SUTTON COUNTY

Texas et al's No. 1 Mower, 1,980 ft. from S and W of Sec. 39, Blk. 5, T.W.&N.G. Sur.
S.D. 4,270 ft.; slight show oil at 4,245-58 ft.

TAYLOR COUNTY

Eastland Oil Co.'s No. 1 Tittle, 660 ft. from N and W, Sec. 37, Blk. 19, T.&P. Sur., 1 mile NE of Trent.
Machine

TERRELL COUNTY

W. A. Sudderth's No. 1 Phelps, 2,157 ft. from N line and 2,482 ft. from the W line of Sec. 5, Blk. 4-A, G. W. Turley Sur.
S.D. 5,635 ft.

TOM GREEN COUNTY

J. F. Jacobs et al's No. 1 De Long, 1,320 ft. from N and 2,640 ft. from E, George Smith Sur. No. 1,825 ft.
Drlg. 247 ft., lime.

UPTON COUNTY

Baldridge Oil Co.'s No. 1 S. Peck, 440 ft. from S and E, Sec. 29, Blk. 41, Twp. 4s. T.&P. Sur.
Ready to spud.
Gulf Prod. Co.'s No. 103 McElroy, 1,980 ft from S and 660 ft. from W, Sec. 197, Blk F, C.C.S.D.&R.G.N.G. Sur.
Drlg. 11,550 ft., black lime and chert; cored 11,519-11,525 ft.; no recovery.
Humble Oil & Ref. Co.'s No. 1 Pollock, C of NW, Sec. 4, Blk. M.
Elev. 2,758 ft.; T.D. 2,359 ft.; straightening hole.
King Mountain Pet. Co.'s No. 1 Sherk, 330 ft. from S and W, Sec. 29, Blk. 1, M.K.&T Sur.
T.D. 1,340 ft., salt; underreaming 8-in. csg. at 800 ft.
Williams & Williams Drlg. Co.'s No. 1 Robbins, 1,600 ft. from S and 1,900 ft. from E, Sec. 4, G.C.&S.F. Sur.
Drlg. on iron at 2,040 ft.

WARD COUNTY

Alexander's No. 1 Richter, 1,650 ft. from NW, 1,170 ft. from NE line of Sec. 27, Blk. 34, H.&T.C. Sur.
Drlg. 1,915 ft., anhydrite.
Atlantic Oil Prod. Co.'s No. 1 Monroe, 566 ft. SW and 350 ft. SE of E cor. of J. C. Russell Sur. No. 3, but in Sec. 2, J. V Border's Sur.
T.D. 2,451 ft.; shot and cleaning out at 2,400 ft.
Bradford et al's No. 1 E. R. Allen, 660 ft. from NW line and 551 ft. from NE line, Sec. 11, Blk. 5, H.&T.C. Sur.
T.D. 1,520 ft., anhydrite; shut down.
Caprito's No. 1 Hardage & Wilson, 2,310 ft from NE and 990 ft. from SE, Sec. 11, Blk. 34, H.&T.C. Sur.
Material.
Cook Drlg. Co.'s No. 1 Wood, 330 ft. from NW and SW, Sec. 5, W. F. Stewart Sur.
T.D. 2,548 ft.; plugged back to 2,527 ft.; S.D. for orders.
Eastland Oil Co.'s No. 1 Richter, 2,310 ft. from NW and 330 ft. from SW of Sec. 23, Blk. 34, H.&T.C. Sur.
Drlg. 1,600 ft., anhydrite.
Gulf Prod. Co.'s No. 55 O'Brien, 1,650 ft. N and 330 ft. from E, Sec. 18, Blk. F.
Drlg. 1,645 ft., salt.
Gulf Prod. Co.'s No. 56 O'Brien, 2,310 ft. from N and 330 ft. from E, Sec. 18, Blk F.
Drlg. 700 ft., Red rock.
Magnolia Pet. Co.'s No. 2 Sealy Estate, 2,310 ft. from S and 330 ft. from W, Sec. 43, Blk. F.
Drlg. 400 ft., Red rock.
Postellio & Caprito's No. 1 Purcell, 330 ft from NE and 990 ft. from NW, Sec. 17, Blk. 34, H.&T.C. Sur.
T.D. 2,775 ft., lime; rigging up rotary.
Rector Oil Co.'s No. 1 Monroe, 660 ft. from SE and NE, Sec. 2, Blk. 1, W.&N.W. Sur.
Drlg. 1,998 ft., anhydrite.
Sageland Oil Corp.'s No. 2 Pure-Bennett, 1,650 ft. from NW and 2,310 ft. from SW S.D. 220 ft.
Jerry Sines' No. 1 Brown, 330 ft. from NW and NE, Sec. 13, Blk. 5, H.&T.C. Sur.
Drlg. 750 ft., lime; water sand 660-665 ft.
Jerry Simes et al's No. 1 Miller, 330 ft. from N and NW of E cor. of Sec. 19, but in Sec. 20, Blk. 32, H.&T.C. Sur.
Drlg. 1,070 ft., Red rock.
West Texas O. & R. Co.'s No. 1-C University, 330 ft. from N and E, Sec. 6, Blk. 16.
T.D. 1,578 ft., sand; running 7-in. csg.

WINKLER COUNTY

Barnsdall Oil Co.'s No. 1 Brown & Aultman, 2,310 ft. from N and W, Sec. 6, Blk. 5, P.S.L. Sur.
Drlg. 2,365 ft., lime.
Green Prod. Co.'s No. 1 J. F. Cross, 330 ft. from N and 2,310 ft. from W, Sec. 4, Blk. B-10, P.S.L. Sur.
Material.
Harry Adams' No. 2 Scarborough, 990 ft. from N line and 990 ft. from W line, Sec. 2, Blk. 77, P.S.L. Sur.
Location.
Humble Oil & Ref. Co.'s No. 2-A Walton, 660 ft. from S and W, Sec. 48, Blk. 26.
Derrick.
Jeffries et al's No. 1 Brown & Aitman, 2,310 ft. from S and W, Sec. 6, Blk. B-5.
T.D. 3,213 ft., lime; testing; flowing average of 60 bbls. oil per day.
Magnolia Pet. Co.'s No. 6 Watton, 330 ft. from S and 1,650 ft. from W, Sec. 1, Blk. 26, P.S.L. Sur.
Drlg. 2,627 ft., lime; topped lime 2,521 ft.
J. C. Maxwell's No. 1 Clapp, 2,310 ft. from N and 330 ft. from E, Sec. 27, Blk. 26, P.S.L. Sur.
T.D. 3,487 ft.; plugged back to 3,200 ft.; shot; treated with 3,000 gals. acid; bailing to test.
Maxwell & Atlantic's No. 2 Daugherty, 990 ft. from S and 330 ft. from E, Sec. 11, Blk. 26, P.S.L. Sur.
Drlg. 925 ft., Red rock.
Mid-Continent Pet. Corp.'s No. 2 Howe, 1,650 ft. from N and 330 ft. from W, Sec. 13, Blk. 26.
T.D. 2,989 ft.; T.P. 2,300 ft.; flowing 20 bbls. oil per day; may acidize.
Richardson's No. 1 Walton, 1,010 ft. from S and 330 ft. from W, Sec. 1, Blk. B-3.
S.D. 2,070 ft.
Richardson's No. 1 Hill, 1,980 ft. from E line, 660 ft. from S line, Sec. 18, Blk. B-11, P.S.L. Sur.
T.D. 3,846 ft.; P.B. to 3,155 ft.; flowing 15 bbls. a day and a little water; testing.
Sayre Oil Co.'s No. 2 Lum Daugherty, 990 ft. from S and 330 ft. from E lines of Sec. 2, Blk. 26, P.S.L. Sur.
Derrick and moving in material.
Sayre Oil Co.'s No. 1 Lock, 330 ft. from S and E, Sec. 2, Blk. 26, P.S.L. Sur.
T.D. 2,737 ft., sand; S.D. for orders.
Sayre Oil Co.'s No. 2 Howe, 330 ft. from N and W, Sec. 13, Blk. 26, P.S.L. Sur.
Drlg. 1,400 ft., salt.
Shelly Oil Co.'s No. 2 Halley, 1,320 ft. from N and 2,200 ft. from E, Sec. 25, Blk. B-11, P.S.L. Sur.
S.D. 2,090 ft.
Sinclair Oil Co.'s No. 1 Lowett, 330 ft. from N and E, Sec. 36, Blk. 26, P.S.L. Sur.
Drlg. 716 ft., sandy shale.
Sun Oil Co.'s No. 1 Halley, 2,200 ft. from N and 440 ft. from E, Sec. 24, Blk. B-12, P.S.L. Sur.
Drlg. 2,656 ft., sand.
Texas Pacific Coal & Oil Co.'s No. 2 Daugherty, 1,650 ft. from S and 330 ft. from E, Sec. 2, Blk. 26, P.S.L. Survey.
Drlg. 175 ft., red sand.

GREGG COUNTY

O. T. Clark's No. 1 Williams, 2,100 ft. from S and 2,400 ft. from W of D. Hill Sur., 3 miles NE of Longview.
S.D. 3,630 ft.

HENDERSON COUNTY

Campbell and Chamberlain's No. 1 R. Ansley, 1,724 ft. W and 300 ft. S of SE cor. of M. Matthews Sur., N. H. T. Thompson Sur.
S.D. 100 ft.
Crosby and Pulp's No. 1 M. T. Dobbs, NW cor. of east Dobbs 100-ac. tract, 4 miles E of Malahoff and S of Railroad, George Aldrick Sur.
T.D. 4,048 ft.; tested S.W.; C.O.
H. M. Wilson's No. 1 fee, 970 varas S of NE cor. of 943-ac. tract, 5 miles N of Malahoff.
Derrick.

HILL COUNTY

Humble O. & R. Co.'s No. 1 Holderman, 1,667 ft. from E and 750 ft. from N line of tract in C. Sullivant Sur., 1 mile W of Mt. Calm.
Elev. 657 ft.; T.D. 2,734 ft.; hard lime; D.S. test 2,539-42 ft.; set packer 2,516 ft.; ½-in. choke; tested 12 thribbles mud and 8 thribbles fresh wtr. in 5 min.; D.S. test 2,668-78 ft. showed 3 thribbles rotary mud and 16 thribbles fresh wtr.; top Edwards lime 2,678 ft.; drlg. 2,734 ft.

HOPKINS COUNTY

D. A. Hale et al's No. 1 L. M. Hall, 300 ft. from N and E lines of 70-ac. tract, 1 mile SE of Miller Gros. A. Caro Sur.
Pecan gap 1,825-2,040 ft.; T.D. 2,700 ft.; shale; S.D.; repairing boiler.

HUNT COUNTY

Cauble & Thompson's No. 1 Reed, 330 ft. N of northerly NE cor. of C. B. Payne Sur., but in F. Thweatt Sur., 3 miles SE of Greenville.
Coring shale 3,198 ft.
Shawver et al's No. 1 Phillips, 1,200 ft. E of Winan's No. 1 Phillips, University Lands Sur., 2 miles W of Commerce.
Elev. 522 ft.; T.D. 1,617 ft.

KAUFMAN COUNTY

Germany et al's No. 1 Clark, 951 ft. N and 1,000 ft. W of tract, S. Eden Sur.
T.D. 1,780 ft.; shale; S.D.
Murry & Emerson's No. 1 G. W. Martin, 1,660 ft. from W and 250 ft. from N of 140-ac. tract, from W. L. C. Butler Sur., 2 miles NE of Kemp.
S.D. 27 ft.
L. P. Kean's No. 1 J. B. Hunter, R. Sowell Sur., 300 ft. from SW and 150 ft. from SE of 50-ac. tract, 4 miles S of Terrell.
Drlg. 3,194 ft.

LIMESTONE COUNTY

Chapman's No. 1 Hunt, 200 ft. from N and 350 ft. from W line 34.75-ac. tract, Israel Wood Sur., 3 miles NE of Kosse.
T.D. 3,637 ft.; top sand 3,578 ft.; csg. collapsed while running; pulling with jack.
C. F. Carter's No. 1 Dean, 660 ft. from SE and 330 ft. from SW lines of 75-ac. tract, P. Valella Sur., 8½ miles SW of Mexia.
T.D. 1,758 ft.; shale; bailing to test.
Crawford's No. 1 Vol DeLong.
Well burning; est. 100,000 ft. gas; little S.W.
Doughtry et al's No. 1 S. Welch, 150 ft. from NW and 900 ft. from NE of 77.64-acre tract in A. Varilia Sur., 4 miles W of Groesbeck.
T.D. 2,810 ft.; S.D. for fuel.
Magnolia Pet. Co.'s No. 28 Boyd, 300 ft. NE of No. 26 (Wortham Field).
Rigged up.
Pure Oil Co.'s No. 6-S Ross, 1,500 ft. from N and 400 ft. from E of H. Ross Sur. (Mexia Field).
T.D. 765 ft.; shale; S.D.

NACOGDOCHES COUNTY

Murray Oil Co.'s No. 1 C. B. Watkins, 150 ft. from N line and 330 ft. from NW lines of 160-ac. tract, 3 miles S of Caro, H. Y. Bailey Sur.
Elev. 457 ft.; drlg. 3,450 ft.
L. & G. Oil Co.'s No. 1 Z. Ramblin, 900 ft. N and 330 ft. W of SE cor. of tract and survey, J. Simpson Sur., 13 miles NE of Nacogdoches.
T.D. 3,275 ft.; first S.O. 2,980-90 ft.; second S.O. 3,244-50 ft.; in chalk.

NAVARRO COUNTY

Bennett Brothers' No. 1 T. E. Stewart, 150 ft. from NE line of lease, 10 miles SW of Corsicana, Wm. W. Bowen Sur.
T.D. 1,136 ft.; S.D.
S. B. Codding et al's No. 1 Lela Kent, 450 ft. from S line and center of N and S lines of lease, 3 miles NE of Chatfield, C. B. Emmons Sur.
S.D. 1,340 ft.
W. J. Keeling et al's No. 1 J. F. Rushing 484 ft. from N line and 150 ft. from W line of 184-ac. tract, 6 miles SW of Richardson, Henry Ford Sur.
T.D. 2,851 ft.; bad csg.; will reset.
McCullough et al's No. 1 C. Berry, 320 ft. from SE cor. of 35-acre tract, 1 mile W of Dawson, William Moss Sur.
S.D. 625 ft.; arranging to resume drlg.
McGlothlin's No. 1 Dobbin, 150 ft. W and midway from N and S lines of 133-ac. tract, E. Lowry Sur., 2 miles N of Corsicana.
Drlg. 1,875 ft.; shale and boulders; Austin 1,691-1,701 ft.; elev. 442 ft.
McGlothlin et al's No. 1 Barnett, 1,320 ft. N and 150 ft. W of 355-ac. tract, Elisha Powers Sur.
Elev. 345 ft.; T.D. 3,920 ft.; blue shale; comp. Mar. 9; dry and abd.
Wiggins et al's No. 1 Donoho, 450 ft. from N and 1,101 ft. from E lines in John Couple Sur., SW of Corsicana.
Elev. 467 ft.; cored 1,381-88 ft.; shale and lime streaks; dry sand; T.D. 1,388 ft.; shale.

RED RIVER COUNTY

Dinger's No. 1 W. T. Norris, 1,000 ft. from S and 1,900 ft. from W of 400-ac. tract, Jos. Guest Sur., 1 mile S of Detroit.
T.D. 1,200 ft.; corrected; show gas; may set csg.

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Breckenridge, Texas—Tel. 206—P. W. Pitzer, C. K. West, C. F. Hogan, G. R. Whitney

East Central Texas Wildcats

(Continued from Page 38)

330 ft. out of NW cor. of 50-ac. tract, 4 miles E of Teague.
Pecan gap 2,583-2,705 ft.; top broken Austin 3,490 ft.; top hd. 3,523 ft.; base Austin 4,070 ft.; top Woodbine 4,374 ft.; T.D. 4,428 ft.; S.W. sand; dry and abd.

Joiner's No. 1 D. Rust, C. C. Wilborn Sur., 234 ft. N and 254 ft. W of most southerly SE cor. of Sur., just south of Avery. Moving in rig.

RUSK COUNTY

George Hudson et al's No. 3 Jeff Phillips 150 ft. from N line of survey and 700 ft. from W line of 100-ac. tract, 4 miles SE of Minder N. Villaria Sur. S.D. 3,673 ft.

Ben Lamb's No. 1 H. Leath, 330 ft. out of NW cor. of 185-ac. tract in L. J. Dooley. S.D. 3,837 ft.

Richardson's No. 1 Wood. Derrick.

SMITH COUNTY

Cloud et al's No. 1 Dendall, 330 ft. from S and W of 55-ac. tract, J. Williams Sur., 3 miles E of Van Field. S.D. 1,340 ft.

Dr. Garland's No. 1 Bartlett, 330 ft. out of SE cor. of R. G. Steeart Sur., 1 mile SE of Jamestown, ½ mile E of Cloud. T.D. 2,246 ft.; Navarro shale; S.D.

W. R. Harrison's No. 1 Rushing, J. Herring Sur. (O.W.D.D.). T.D. 4,673 ft.; to test again.

Peveto-Howze et al's No. 1 F. J. Watson, 150 ft. out of NW cor. of 75-ac. tract, Oliver Anderson Sur. Spudded Mar. 14; 10-in. 178 ft.; W.O.C.

TITUS COUNTY

S. Rotondi's No. 1 Lillianstun, 1,200 ft. E from NW cor. of J. Bodt Sur. and 330 ft. N, but in W. H. Crawford Sur., 5 miles NE of Talco. Elev. 301 ft.; derrick.

VAN ZANDT COUNTY

Delcambre et al's No. 2 Crim, 400 ft. from S and 150 from E lines, Nacogdoches Co. School Lands. T.D. 1,327 ft.; C.O.

Green and Winn's No. 1 Eaton, 330 ft. out of most westerly SW cor. of J. Wilson Sur., 2 miles SE of Martin. T.D. 2,919 ft.; green sandy shale; 7-in. 2,-800 ft.; core 2,856-69 ft.; rec. 4 ft. red beds; 4 ft. sand, and 1 ft. good oil sand; W.O.C.

J. Beren et al's No. 1 Bryant, 483 ft. N of same operator's dry hole, Nacogdoches County School Land Sur. W.O.S.R. 1,325 ft.

Beren et al's No. 2 Palmer, 544 ft. from S and 686 ft. from E of 69.5-ac. tract, Nacogdoches County School Land. T.D. 1,324 ft.; tested slight show oil; waiting on power.

Miller et al's No. 1 J. M. Palmer, 150 ft. from S and E lines of 69-ac. tract, Nacogdoches County School Land Sur. C.O. 1,192 ft.

M. Rouch et al's No. 1 Bearden & Palmer 150 ft. out of SE cor. of 61-ac. tract, Nacogdoches C.S.L. S.D. 1,237 ft.

WOOD COUNTY

Hill & Hill's No. 1 J. J. Phillips, 330 ft. from N and E, James M. Moore Sur., 5 miles S of Winnsboro. Location.

Southwest Texas Wildcats

(Continued from Page 37)

Sur. No. 15. T.D. 1,481 ft.; bailing.

Jones & Kieffer's No. 1 LaGrane, NW cor. of tract, 210 ft. each way, F. Rolen Sur. Standing 586 ft.

Geo. O'Neil's No. 1 Holly Crouch, NW cor. of 150-ac. tract. Preparing to set csg. 1,395 ft.

CALDWELL COUNTY

Coffield & Lanning's No. 1 Franks, 150 ft. from N and E lines of 8¼ of 131.6 acres, Edward Brown Sur. Ready to spud.

DUVAL COUNTY

Buffalo-Texas Syndicate's No. 1 Escobas, 2,777 ft. from N line, 1,944 ft. from W line of 930-ac. tract in San Francisco grant. S.D. 4,010 ft.

Eckert-Peacock et al's No. 1 C. W. Sutherland, 330 ft. N and W lines of SW¼ NE¼ of Sur. 188. Standing 2,374 ft.

Johnson Bros.' No. 1 Hubbard, 990 ft. out of SW cor. of Sur. 84. Rigging up.

Henderson & Harvey's No. 1 Chernosky, 330 ft. from S line, 660 ft. from W line, Sur. 226. Drlg. 500 ft.

Pearson et al's (Grimes et al) No. 1 Fitzsimmons, 300 ft. from S line, 150 ft. from E line of Sur. 291. Fishing 4,450 ft.

EDWARDS COUNTY

Harry Adams' No. 1 Holman, 1,650 ft. N line, 330 ft. from E line, Sec. 22, C.C.S. D.&R.G.N.G. Sur. S.D. 602 ft.

FAYETTE COUNTY

Clark et al's No. 1 Becker, 750 ft. NW line, 1,300 ft. SW line of 143.74-ac. tract in A. E. Baker League. Location.

Ross Fenton's No. 1 Kasper (263-ac.), 3,-000 ft from NE line, 1,280 ft. from SW line, of Thos. Green Sur. No. 28. Location.

FRIO COUNTY

Amerada Pet. Co.'s No. 3 Haiff & Oppenheimer, 2,100 ft. from southwesterly NW line, 300 ft. NE line of B. J. Gilman Sur. No. 16. T.D. 3,936 ft.; making more oil, gas and wtr. than before; deepening.

W. T. Shoemaker's No. 1 M. Roche, 150 ft. SW cor. of Carl Wenzel Sur. No. 139. Washing 2,400 ft.

GILLESPIE COUNTY

Ed L. Nixon's No. 3 Lindig, 12,694 ft. S line, 1,332 ft. W line, Maria Josepha Guerra Sur. No. 41. S.D. in lime 692 ft.

GONZALES COUNTY

Southwestern Dev. Co.'s No. 1 W. S. Atkinson, 2,054 ft. from N line, 1,034 ft. from E line of 185-ac. tract in S. Y. Reams Sur. Drlg. 3,100 ft.

GUADALUPE COUNTY

C. W. DeFreest's No. 1 Henry Beck, 502 vrs. from NW line, 150 vrs. from N line, Malpaz Sur. Drlg. 420 ft.

A. D. Locke's No. 1 Lowman, 210 ft. from SE and SW lines of 2,500-ac. tract in C. Campbell Sur. T.D. 1,049 ft.; no report.

Suttle et al's No. 1 Baenziger. Standing 2,935 ft.

Seidemann et al's No. 1 Seidemann, 460 ft. from NW line, 360 ft. from NE line of 147.5-ac. tract, Esnaurrizer Sur. Drlg. 1,600 ft.

HIDALGO COUNTY

D. & D. Oil Co.'s (Clay, Spencer & Hood) No. 1 Brooks & Showers, 330 ft. N and E lines of Lot 4, Blk. 26, Por. 79-80. Drlg. 3,310 ft.

Double D Oil Co. and Harrison's No. 1 Lula George, 150 ft. from S and W lines of SW 30 acres of Tract 12, Porcion 41. Rigging up.

Maxwell-Young's No. 1 King, 175 ft. N and E lines of Lot 8, Blk. 11. T.D. 875 ft.; standing.

Downey & Morton's No. 1 Daskom, 450 ft. from E line, 55 ft. from S line of Blk. 34, Por. 45. Drlg. 3,260 ft.

Nutex Oil Co.'s (Hankamer & Camp) No. 1 F. Rapp 511-ac. tract, Laguna Seca League. Standing 125 ft.

E. A. Showers' No. 1 Brocks & Showers, 660 ft. from N and E lines of Lot 11, Blk. 18, Porcion 79. T.D. 1,000 ft.; drlg. wtr. well.

Union Sulphur Co.'s No. 3 American Rio Grande Land & Irrig. Co., 400 ft. from S line, 600 ft. from E line of Lot 2,082, Blk. 88, 200 ft. W of No. 2. Drlg. 7,020 ft.

JIM HOGG COUNTY

French Oil Co.'s No. 1 Pena, 660 ft. from E line on lines of Blk. 41-42, Share 2, Sur. 574. Spudded.

Miller & Pippin's No. 1 Yeager, 527 ft. S line, 150 ft. E line of Blk. 6, Sur. 20. Drlg. 2,020 ft.

Southwestern Dev. Synd.'s (formerly John D. Norwood) No. 1 C. W. Hellen, 330 ft. N and W lines, Sur. 48. T.D. 1,338 ft.; deepening.

Sun Oil Co.'s No. 1 S. K. East, 660 ft. from N and W lines, Blk. 126, La Novia de Santeo Domingo grant. Abd. 3,305 ft.

JIM WELLS COUNTY

P. M. Evans et al's No. 1 Cristier, C of Sec. 41, I.&G.N. Sur. Drlg. 1,700 ft.

Joe Lundin's No. 1 T. C. Hewitt, SE cor. Sec. 51, McKinney & Williams Sur. Rigging up.

Maer & Shira's No. 1 Schaeffer, 1,320 ft. E of NW cor. center of Blk. 15, of subdivision of ranch. Derrick.

KARNES COUNTY

H. A. Pagenkopf's No. 1 T. J. McAda, 330 ft. from NE and NW lines of Tract C, Martinez Sur. Derrick.

R. G. Tonkin's No. 1 Miss Olive Henke, 3,-640 ft. from SW cor. N along W line, thence at R/A 330 ft. Seguin grant. T.D. 2,830 ft.; tested wtr.

KERR COUNTY

Meteor Oil Co.'s (Edminton & Walker) No. 1 Whitworth, 1,160 ft. from S line and 1,-333 ft. from E line of Sec. 1,439, of the H.E.&W.T. Sur. Drlg. 950 ft.

Jeff Love and Eastland Oil Co.'s No. 5-E Jeff Love, 1,500 ft. SE of No. 1 and 1,530 ft. from SE cor. and 300 ft. from N line of Sec. 1,591. Drlg. sand below 4,010 ft.

LEE COUNTY

Jas. E. Pederson's No. 1 Turner, 1,360 ft. from N line, 150 ft. from E line of tract, David Hudson Sur. T.D. 6,560 ft.; P.B. to 6,150 ft.; trying to bail.

Stowe & Scharlach's No. 1 Otto. T.D. 1,700 ft.; standing; moving in new boiler to deepen to Edwards lime.

LIVE OAK COUNTY

Arthur, Brunson & Hall's No. 1 W. P. Howard, 150 ft. from W line, 2,400 ft. from N line of 200-ac. tract, in B. Ayers Sur. T.D. 1,359 ft.; no report.

Baugh & McMillan's No. 1 Walton & Campbell, 1,500 ft. NE line and SE line of D. R. Fant Sur. Trying to make D.S. test 3,205 ft.

California Co.'s No. 1 Blankenship, 466 ft. from SW line, 2,000 ft. from SE line, A. A. Dunn Sur. Drlg. 4,574 ft.

Henderson Coquat's (Luling O. & G. Co.) No. 1 Rex, C of SW¼ of G.H.&H. Sur., Abst. 197, 3 miles S of Mileska. Drlg. 1,300 ft.

Smith & Story's No. 1 G. T. Frederick, 1,-650 ft. from railroad, 330 ft. from southern N line of 420-ac., Curry Sur. Testing 4,271 ft.

MAVERICK COUNTY

Escher & Andrews' No. 1 Mathews, NW cor. of B. C. Flowers Sur. Standing 615 ft.

McMULLEN COUNTY

Howard & Claunch's No. 4 Claunch, 1,800 ft. from SE line, 1,200 ft. from SW line of M. Hely Sur. Set csg. 750 ft.

Howeth & Swiger's No. 1 Rhodes, near C of Sec. 22, M. F. Lowe Sur. Moving in material.

Points et al's No. 1 Fahler, 2,000 ft. from S line, 2,500 ft. from W line of 1,000-ac. tract, Pittuck Sur. T.D. 603 ft.; no report.

Witherspoon Oil Co.'s No. 1 Lark, Blk. 110, Scrugham Sur. Spraying oil and gas at 1,026 ft.

MEDINA COUNTY

John Lind's No. 1 Jungman, 2,050 ft. from N line, 550 ft. from W line, J. Degat Sur. Rigging up.

Scoggins & Sanders' No. 1 L. W. Burrell, 150 ft. from E line, 1,750 ft. from N line of M. E. Gage Sur. 395. S.D. 1,880 ft.

MILAM COUNTY

Mincrept Mfg. Co.'s No. 1 Dymke, 600 ft. from W line, 150 ft. from N line of 50-ac. tract, Allen Sur. T.D. 1,551 ft.; I.P. 100 bbls. per day.

H. V. Pedersen's No. 1 Sandow (formerly C. F. Drake et al's No. 1 Standard Coal Co.) 970 ft. SW line, 1,700 ft. SE line of G. L. Johnson Sur. Rigged up to resume drlg. at 1,575 ft.; no report.

Second Natl. Bank's No. 2 Ward, 700 ft. from SE line, 2,598 ft. from SW line, L. Taylor Sur. S.D. 60 ft.

NUECES COUNTY

Magnolia Pet. Co.'s No. 1 S. Page, 190.8 ft. from W line, 196 ft. from N line of 75-ac. tract in Kinney Sur. No. 586, Sec. 8. Testing 4,573 ft.

REAL COUNTY

H. J. Heartwell et al's No. 2 L. J Maby, 694 ft. from W line and 2,153 ft. from S line of A.B.&M. Sur. No. 175. T.D. 2,837 ft.; S.D.

SAN PATRICIO COUNTY

Allied Minerals' No. 1-A Ramsey, 466 ft. E, 220 ft. N of SW cor. of the North B. Giddings Sur. on a 1,000-ac. tract. Sandy shale 2,642 ft.; moving in heavier rig; S.D.

Masterson et al's (Tom Graham) No. 1 Wurzbach, 330 ft. from W line, 4,350 ft. from S line of C. C. Hornsby Sur. Ready to spud.

Plymouth Oil Co.'s No. 1-C Welder, 10 mi. NW Sinton. W.O.C. 1,291 ft.

Stanolind O. & G. Co.'s No. 1 J. J. McMillan (Whitehurst), 165 ft. from W line, 990 ft. from N line of Lot 12, Fulton Pasture Subd., Fitzsimmons League. Drlg. 4,203 ft.

STARR COUNTY

Armstrong, Emanuel & Adams' No. 1 S.C. C.C., 330 ft. from S and E lines of Blk. 57, Porcion 88-89. Drlg. plugs to test 2,705-11 ft.

C. R. Borah's No. 1 A. Guerra, San Jose grant, 330 ft. from N and 150 ft. from E lines of Sec. 6 (NE part of county). T.D. 2,740 ft.; no report.

John H. Clopton's No. 1 Roos, 13,155 ft. N of Highway 4, along E line of Por. 92, 3,300 ft. N, 80 deg. 45 min. W. T.D. 4,334 ft.; P.B. to 4,200 ft.

John H. Clopton's No. 1 Dioncia Lopez de Tijerina, Blk. 4, Tract C-14, Porcion 80. S.D. 1,400 ft.

Crawford et al's No. 1 Hicks et al, 150 ft. SE and NE line of NW, Perdernal grant. S.D. 1,615 ft.

Dainwood Oil Co.'s No. 1 Guerra, 5,280 ft. W line and N line of Share 26, Porcion 70-71-72. Location.

Geo. Lacy's No. 1 Abney, Porcoin 99; ½ mi. W of Vernon's No. 1. Derrick.

F. D. Vernon's No. 1 G.L.&C.C.O., 330 ft. midway between N and S lines of Lot 8, Porcion 100. S.D. 2,795 ft.

Morris & Bryan's No. 1 Hicks & Hicks, 660 ft. NE line, 2,000 ft. SE line of 500-ac. tract, Pedernal grant. T.D. 1,103 ft.; no report.

Conroe Drlg. Co.'s No. 1 Guerra, 330 ft. from NE and SE lines of Blk. 35, J. N. Crawford Subd., Por. 56, Jurisdiction of Mier. Fishing 2,225 ft.

Dale Sneed's No. 1 Y. and V. Guerra, 330 ft. W line of Por. 68, 330 ft. S line of 1,000-ac. block of N end of Por. 92, in Por. 68. T.D. 330 ft.; no report.

R. H. Vice's No. 1 Carruth, 3,690 ft. from S line, 3,300 ft. from W line, Share B-1, Por. 91-92. T.D. 4,016 ft.; set csg. 2,895 ft.; W.O.C.

TRAVIS COUNTY

Anderson's No. 1 A. D. Beham. Drlg. 510 ft.

D. Prewitt's No. 1 Ed Peterson, 150 ft. from SE and SW lines of tract, L. Kimbro Sur. Rigging up; S.D.

C. A. Stubbs' No. 1 Julius Kerlin, 530 ft. SW line, 450 ft. NW line of 123-ac. tract in I. Lindsay Sur. No. 61. S.D. 1,135 ft.

WEBB COUNTY

Frank E. McMillan's No. 1 Bruni, 330 ft. from S and E lines of SW¼ of SE¼ of Sur. 77. Drlg. 2,320 ft.

Payne et al's No. 1 Hoggterp, Blk. 5, Sur. 1,116, N of Oilton. S.D. 600 ft.

J. Elmer Thomas' No. 2 Gates, 1,200 ft. from W line, 300 ft. from S line, Sec. 22, C.C.S.D.&R.G.N.G. Sur., Sec. 65, Blk. 1. T.D. 370 ft.; I.P. 500,000 ft. of gas.

Arthur H. Wray's No. 1 Geo. Stuempke, Share 1, Brewster pasture, Galan grant. Drlg. with spudder 600 ft.

WILLACY COUNTY

Daniel et al's (South Texas Dev. Co.) No. 1 Armendias, 1,500 ft. W of Arroya Colorado River, 1,200 ft. N of S line of Tract 4. T.D. 4,780 ft.; no report.

WILLIAMSON COUNTY

Gault & Mimms' No. 1 H. V. Seggren, 1,000 ft. from W line, 300 ft. from S line of 450-ac. tract, Revel Sur. T.D. 43 ft.; no report.

Goss et al's No. 1 Timmerman. T.D. 28 ft.; no report.

Johnson & Ray's No. 1-B M. Oxford Smith, 600 ft. S of No. 1-A in S. Williams Sur. S.D. 20 ft.

J. Morgan Russell's No. 1 Nelson, 1,150 ft. S line, 1,115 ft. E line of John L. Justice Sur. No. 2. S.D. 894 ft.

ZAPATA COUNTY

F. H. Crow et al's No. 1 Daniel Yzaguirre, 330 ft. out of SW cor. Share 1, Porcion 14-15-16, D. Yzaguirre tract. Location for 3,500-ft. test.

Danvers & Harrison's No. 1 D. A. McAskill, near N line of county. Set and cmtd. csg. 30 ft.

H. & M. Oil Co.'s (Virginia Hardee) No. 1 Slator, 514 ft. from SW line, 150 ft. from SE line of Blk. 65, Borrego grant. Standing 22 ft.

Joe Palmer's No. 1 J. M. G. Martinez, 150 ft. SE and SW line, Blk. 27, Sur. 434. Drlg. 1,445 ft.

Southwest Texas Proven

Week Ending March 16

CAESER—BEE COUNTY

Caesar Oil Co.'s No. 3 R. E. Miller. T.D. 3,090 ft.

Neversuch Oil Co.'s (J. K. Hughes of Mexia) No. 1 Barroum, 330 ft. from N and W lines of SW 40-ac. of W½ of Barroum 1,068-ac. tract in Baker Sur. Abd. 3,504 ft.

Luling O. & G. Co.'s No. 6-B Ruhman, 660 ft. from NW line, 550 ft. from NE line of 163-ac. tract, Hodge Sur. C.O. 3,067 ft.

DIRKS—BEE COUNTY

Conservative Oil Co.'s No. 1 Harris, 330 ft. S of N line, 330 ft. W of E line of 30-ac. tract, J. L. Dugat Sur. Rigging up.

Navarro's (Dirks Bros.) No. 1 J. E. Roth, 280 ft. from N line, 330 ft. from W line of S½ of NW¼ of Sec. 7. Drlg. 3,000 ft.

PETTUS—BEE COUNTY

United Prod. Co.'s No. 49 Ray, 30 ft. from N line, 1,320 ft. from W line of W. J. Porter Sur. Drlg. 3,600 ft.

TULETA—BEE COUNTY

Blanco Oil Co. and Buchanan's No. 3-A Perez, 660 ft. from N line, 330 ft. from E line of SE¼ Sec. 9. Drlg. 3,840 ft.

Edwin M. Jones' No. 12 Robinson, 330 ft. from S and W lines of 160-ac. tract. Drlg. 3,991 ft.

Edwin M. Jones' No. 14 Robinson, 900 ft. from S and E lines of Sec. 5. Drlg. 3,000 ft.

Heyser, Heard & Walton's No. 1 fee, 50 ft. from the No. 1. Coring for upper sand 3,100 ft.

Houston Oil Co.'s No. 6 Ed Strauss, C of Lot 11, SW¼ Sec. 9, W offset to No. 5. Drlg. sand 3,992 ft.

Houston Oil Co.'s No. 10 Ed Strauss, C Lot 5 from SE¼ of Sec. 9, Hahl Subd., J. M. Uranga grant. Waiting on rig.

Mills Bennett's No. 3 Tuleta Merc. Co. Set csg. in sand 3,923-28 ft.

Mills Bennett's No. 3 Silcock. T.D. 3,925 ft.; I.P. 65 bbls. per day; 1,-250 lbs. pressure.

Mills Bennett's No. 3 Harris, 660 ft. W of No. 2 Harris. Rigging up.

Southwest Exploration Co.'s No. 1 Heyden & Bruckham, C of farm tract, 330 ft. from N and W lines of Sec. 20, Uranga grant. Rigging up.

Tuleta Oil Co.'s No. 4 Skinner & Harris, 330 ft. from S and E lines of W 80 acres of NW¼ of Sec. 10. T.D. 3,921 ft.; I.P. 160 bbls. per day; 7/32-in. choke; 400 lbs. tubing pressure; 600 lbs. csg. pressure.

Tuleta Oil Co.'s No. 6 Skinner & Harris, 660 ft. N of No. 5, 330 ft. from W line. Spudded.

Wrightsman Oil Co.'s No. 1 Kimball, 1,200 ft. from NW line, 1,500 ft. from NE line, S. Winship Sur. Spudded and S.D.

VON ORMY—BEXAR COUNTY

Jack Crouch's No. 5 Hoch, 330 ft. S of No. 4, Baerera Sur. No. 58. S.D. 250 ft.

Richcul Oil Co.'s No. 1 Kohler, 1,000 ft. from N line, 155 ft. from E line of J. Vogt 96.5-ac. tract in J. M. Baerera Sur. No. 58. S.D. 1,370 ft.

Richcul Oil Co.'s No. 1 Weilbacker, 155 ft. from E line, about 2,250 ft. S of highway in Jett Sur. S.D. 665 ft.

GOVERNMENT WELLS POOL—DUVAL COUNTY

Mills Bennett's No. 1 W. R. Peters, 330 ft. from S and E lines of NW¼ of Sur. 178. Standing 2,153 ft.

Geo. E. Buck's No. 1 Norton, 330 ft. from N and W lines of SE¼ of SW¼ of Sur. 62. Swbng. 2,377 ft.

H. H. Coffield's No. 5 Wendt, 330 ft. from S line, 310 ft. from E line of NE¼ of Sur. 43. W.O.C. 2,272 ft.

Edgington & Murray's No. 2 C. W. Hahl, 330 ft. N and E lines, Blk. 16, Sur. 350. Swbng. 2,370 ft.

Gov. Wells Oil Co.'s No. 11 State, 1,650 ft. from E line, 330 ft. from N line, Sur. 60. Testing 2,293 ft.

Frank Gravis et al's No. 1 C. W. Hahl, 330 ft. from S and E lines of NE¼ of Sur. 365. Drlg. plugs 3,550 ft.

L. & R. O. & G. Co.'s No. 1 Hahl, 330 ft. from S and E lines of NE¼ of Sur. 62. Drlg. 2,619 ft.

Magnolia Pet. Co.'s No. 4 Humble-D.C.R.C.,

330 ft. from S line, 1,650 ft. from E line of NE¼ of Sur. 363.
T.D. 2,262 ft.; I.P. 25 bbls. per day.
Magnolia Pet. Co.'s No. 1 C. W. Hahl, 330 ft. from N and E lines of Sur. 67.
W.O.C. 2,330 ft.
Magnolia Pet. Co.'s No. 5 Hahl-Norton, in Sur. No. 61.
W.O.C. 2,320 ft.
Magnolia Pet. Co.'s No. 12 Wilson, 990 ft. from S line, 330 ft. from E line, Sur. 136.
Drlg. 1,290 ft.
Reynosa Oil Co.'s No. 3 Lundell, 330 ft. from S and E lines of NE¼ NE¼ of Sur. 60.
Spudded; (correction).
Salt Dome Oil Co.'s No. 5-B Moody, 330 ft. from N and E lines of NE¼ NW¼ of Sur. 60.
Rigging up.
Southwest Drlg. Co.'s No. 1 Luptack, 330 ft. from N and E lines of N 50 acres of E 100-ac. tract in SE¼ of Sur. 41.
Rigged up.
Texas Co.'s No. 4 Hahl, 330 ft. from E and E lines of Blk. 17, Sur. 250.
T.D. 2,365 ft.; I.P. 30 bbls. per day on pump.
Texas Co.'s No. 1 M. Vela, 330 ft. from N and E lines of 8½ of Sur. 42.
T.D. 2,878 ft.; I.P. 140 bbls. per day.
Texas Co.'s No. 5 Vela, 990 ft. E line, 330 ft. N line of 8½ of Sur. 42.
T.D. 2,732 ft.; I.P. 45 bbls. per hr.
Texas Co.'s No. 2-B Wendt, 330 ft. from S and E lines of 75-ac. tract, Sur. 43.
T.D. 2,282 ft.; I.P. 10,000,000 ft. of gas, 325 lbs. rock pressure.

LOMA NOVA—DUVAL COUNTY

Humble O. & R. Co.'s No. 2 Ruiz, 1,722 ft. from W line, 330 ft. from SE line of Sur. 553.
T.D. 2,829 ft.; I.P. 44 bbls. per hr.; 3/16-in. choke; 310 lbs. csg. pressure; 150 lbs. tubing pressure.
Magnolia Pet. Co.'s No. 7 Ruiz, 1,403 ft. from SW line, 330 ft. from SE line, Sur. 574.
Derrick.

DARST CREEK—GUADALUPE COUNTY

Grayburg Oil Co.'s No. 13 McKean, 500 ft. NE of No. 4, Cottle Sur.
T.D. 1,758 ft.; I.P. 250 bbls. per day.
Grayburg Oil Co.'s No. 14 McKean, 700 ft. from No. 13.
Moving in rig.

LUCAS—LIVE OAK COUNTY

Houston Oil Co.'s No. 31 Cartwright, 1,010 ft. N of No. 30, J. Sandman Sur.
Drlg. plugs 1,015 ft.
Lion Oil Ref. Co.'s No. 4 McNeil, 355 ft. due S of No. 1.
Drlg. 1,670 ft.

SAM FORDYCE—HIDALGO COUNTY

Alamo Drlg. Co.'s No. 2 Guerra, 233 ft. from N line, 330 ft. from E line of NW 12.5 acres of S 75 acres, of Tract 254, Por. 40.
T.D. 2,125 ft.; standing.
Bridwell's No. 2 Pena, 200 ft. from E line, 230 ft. from S line of Tract 277, Por. 40.
Set csg. 2,750-55 ft.
Double D Oil Co. and Harrison's No. 1 Lula George, 150 ft. from S and W lines of SW 20 acres of Tract 13, Porcion 41.
Rigging up.
Heep Oil Corp.'s No. 1 Lawrence, 226 ft. from N line, 241 ft. from E line of SE 5 acres of Tract 274, Porcion 39.
Drlg. below surface csg.
Hill & Hill's No. 1 C. E. Smith, W end of S 10 acres, Share B-3, Por. 41.
T.D. 2,760 ft.; I.P. 3 bbls. per hr.; ⅛-in. choke.
Kingwood Oil Co.'s No. 1-B Lawrence, 114 ft. from N line, 241 ft. from E line of SW 9.52 ac., Tract 274, Por. 39.
T.D. 2,775 ft.; I.P. 20 bbls. per hr.; 3/16-in. choke; 150 lbs. pressure.
Reed et al's No. 1 Smith, 164 ft. from W line, 133 ft. from N line of S 10 acres of NW 46.29 acres of Share B-3, Por. 41.
Derrick.
Reserve Oil Co.'s No. 3 Seabury, 642 ft. from N line, 230 ft. from E line of N 28-ac. Tract 256, Por. 38.
T.D. 2,762 ft.; I.P. 15 bbls. per hour; ⅛-in. choke.
Reserve Oil Co.'s No. 4 Seabury.
Rigging up.
Roger O. & G. Co.'s No. 2 Guerra, 230 ft. from N and W lines of SE 25 acres of Tract 254, Por. 40.
T.D. 2,761 ft.; I.P. 10 bbls. per hr.
Skelly Oil Co.'s No. 1 Seabury, 330 ft. from S line, 230 ft. from E line of W 24 acres, Tract 256, Por. 38.
W.O.C. 2,800 ft.
Waite's (Scheafer & Mundy) No. 1 Tobasco, Ind. Dist., 25 ft. from N line, 210 ft. from E line of Tract 260, Por. 38.
Drlg. below surface csg.
Weekly Oil Co.'s No. 4 Smith, 1,000 ft. from N line, 165 ft. from E line of NE 34.43 acres, Tract 278, Por. 40.
W.O.C. 2,763-69 ft.
Wheelock & Collins' No. 1 Seabury, SW cor. of SE 20 acres, Tract 256, Por. 38.
Drlg. 2,375 ft.

HENNE-WINCH-FARISS—JIM HOGG COUNTY

Magnolia Pet. Co.'s No. 36-A Martinez, 330 ft. from S and E lines of Sur. 275.
Drlg. 4,204 ft.

SANDIA—JIM WELLS COUNTY

O. W. Killam's No. 4 Wade, ¼ mile N of No. 3 Wade.
Drlg. 4,600 ft.
Magnolia Pet. Co.'s No. 6 Seeligson, 660 ft. W, 330 ft. S of No. 3, Canales Sur. No. 20.
Coring 3,249 ft.

BURNEL—KARNES COUNTY

Marrs & Brown's No. 1 E. Timberg, 330 ft. from NE line, midway NW and SE lines of 177-ac. tract, Johnson Sur.
Comp. a gas well; no T.D. given.

KINGSVILLE—KLEBERG COUNTY

Fidelity Exploration Synd.'s No. 1 Vivian Kivlin, Sec. 4, Blk. 39, K.T.&I. Sur. on Vivian Kivlin lease.
Derrick up.

JACOB POOL—McMULLEN COUNTY

Kennon & Stephenson's No. 2 Lark, 150 ft. from N and W lines of Blk. 15, Scrugham Sur.
Preparing to complete 1,038 ft.
Longhorn, trustee's No. 4 Lark, Blk. 4 of the Scrugham Sur.
T.D. 1,035 ft.; trying to comp.
Loma Oil Co.'s No. 34 Jacob.
Drlg. 750 ft.
Texas Pet. Co.'s No. 1 Wulf, 1,000 ft. from N line, 200 ft. from E line, Two Rivers Subd.
Spudded.

SINTON—SAN PATRICIO COUNTY

Humble O. & R. Co.'s No. 1 Welder, 2,400 ft. from N and E lines of 300-ac. lease.
Drlg. 5,845 ft.

ANGELITA—SAN PATRICIO COUNTY

Plymouth Oil Co.'s No. 2-B Welder, start at SW cor. of "B" lease, thence NW along the W line 2,100 ft., thence 150 ft. NE at R/A.
T.D. 6,859 ft.; completing as gasser at 5,400 ft.

LOS OLMOS—STARR COUNTY

H. L. Curry's No. 1 Bass, 335 ft. E line, 2,522 ft. N line of Sur. 8, Por. 75-76-77.
W.O.C. 1,187 ft.
J. P. Kennedy's No. 1 Kelsey-Bass, 200 ft. SE of No. 7 Kelsey-Bass in Blk. 7 of Porciones 75, 76 and 77.
Standing 710 ft.

BARBACOAS—STARR COUNTY

Merren Bond et al's No. 4 S.C.C.C., 330 ft. from N and E lines of S 20 acres of Blk. 24, of the Jeffries Lambeth Subd., Por. 89.
Drlg. 4,030 ft.

RIO GRANDE CITY—STARR COUNTY

Goodwin et al's No. 1 Pena, 150 ft. from SE and SW lines of Share 80, Por. 81.
Drlg. 1,300 ft.
R. M. Mitchell's No. 1 Salinas, 188 ft. from N line, 860 ft. from W line, Blk. 2, Share 39, Por. 80.
Drlg. 995 ft.

SAXET—NUECES COUNTY

Southern Mineral Corp.'s No. 4 Ocher, 139 ft. S line and 417 ft. E line of Ocher 202.52-ac. tract in Sec. 8.
Derrick.

WEST COLE POOL—WEBB COUNTY

American Liberty Oil Co.'s No. A-14 Bruni, 781 ft. from S line, 330 ft. from W line, Sur. 6, Arispe grant.
Drlg. 2,400 ft.
J. M. Anderson's (Stieren et al) No. 1 Philip, 1,461 ft. from E line, 3,519 ft. from S line of Sur. 320.
Abd. 1,753 ft.
Ross Barnhart's No. 1 de la Garza, 1,500 ft. from N line, 200 ft. from E line of Sur. 262.
Ready to spud.
CarolinaTexas O. & G. Trust, Inc.'s No. 11 S. Benavides, 150 ft. from S line, 600 ft from W line, Blk. 12, Sur. 683.
Drlg. 3,816 ft.
Cole Pet. Co.'s No. 91 Benavides, 614 ft. from SE line, 927 ft. from NE line of Sur. 1.
Drlg. 2,850 ft.
Highland Oil Co.'s No. 2 Bruni, 330 ft. from NW and NE lines of tr. in Sur. 7.
W.O.C. 300 ft.
O. W. Killam's No. 1-A Bruni, 275 ft. from N line, 200 ft. from W line of Blk. 55, Brown Subd., Albercas grant.
T.D. 2,352 ft.; plugged back and set csg. 2,100 ft.; W.O.C.
O. W. Killam's No. 32 Bruni, 260 ft. from SE line, 418 ft. from NE line of Blk. 28, Sur. 8.
Drlg. 2,500 ft.
O. W. Killam's No. 34 Bruni, 236 ft. from SW line, 330 ft. from SE line, Sur. 6.
Derrick.
Magnolia Pet. Co.'s No. 6 Benavides, 150 ft. from S and E lines of SW¼ of SE¼ of Sur. 661.
T.D. 2,350 ft.; I.P. 50 bbls. per day.
Highland Oil Co.'s (Pure) No. 2 Bruni, 330 ft. NW and NE lines of tract in Sur. 7 Location.
Peerless-Seeligson's No. 2 Bruni, 940 ft. from NE line, 260 ft. from SE line Blk. 14, Sur. 5.
Spudded.
J. Elmer Thomas' No. 3 Gates, 1,950 ft. from E line, 900 ft. from N line, Sur. 22.
Set csg. 21 ft.
Sun Oil Co.'s No. 3 Bruni, 260 ft. SE line, 418 ft. NE line of Sur. 5.
Swabbing in at 3,436 ft.
Sun Oil Co.'s No. 6 Bruni, 260 ft. from SE line, 418 ft. from NE line, Blk. 15, Sur. 5.
Drlg. 3,400 ft.

BYERSVILLE—WILLIAMSON COUNTY

R. R. Ogden's No. 1 Matteck, 150 ft. N and W lines of 108.5-ac. tract in White Sur.
Location.

GOPHER—ZAPATA COUNTY

O. W. Killam's No. 2 Bruni, 5,700 ft. from NW line, 2,615 ft. from NE line of Borrego grant.
Drlg. 1,695 ft.

JENNINGS—ZAPATA COUNTY

Texas Co.'s No. 63 Whitehead, 4,004 ft. from SE line, 19,919 ft. from SW line, Cerrito Blanco grant.
T.D. 1,694 ft.; comp. at 1,245 ft. for 50 bbls. per day.
Texas Co.'s No. 64 Whitehead, 4,776 ft. from SE line, 19,556 ft. from SW line, Cerrito Blanco grant.
Drlg. 550 ft.

LOPENO—ZAPATA COUNTY

Alva J. Niles' No. 23 Trevino, 650 ft. from S line, 150 ft. from W line, Blk. 16, Sur. 412.
Testing 1,241 ft.
Norden & Morris' No. 1 Vela, 1,320 ft. from NE line, 660 ft. from SE line, Blk. 6, Por. 36.
W.O.C. 2,349 ft.
Venture Pet. Co.'s No. 1 I. Ramiriz, 990 ft. from NE and NW lines of Blk. 1, Por. 18.
W.O.C. 2,316 ft.

Gasoline Futures on Exchange Reflect Uncertainty in Eastern Market Situation

NEW YORK, Mar. 18.—Gasoline futures today opened with a 1 to 3-point decline. Low octane U. S. Motor gasoline at the Gulf was quoted at 5.71 for July, with bids of 5.72 for August and 5.73 for September, including 1 cent federal tax. The market firmed up slightly during the day with July sales at 5.73. The close was unchanged.

The gasoline future market during the past week has reflected the uncertainty that has been apparent in this territory regarding the oil situation. As the week closed there were favorable reports regarding market developments at the Gulf.

Crude oil futures today opened unchanged to one-fourth cent decline. The market was fairly steady throughout the day with prices at the close being unchanged from Saturday's final quotation. This market has been inactive during the week.

MONDAY, MARCH 11

Gasoline

Month—	High	Low	Close	Previous close	Number of contracts traded
June	....	....	5.70 @ 5.74	5.70 @ 5.73	..
July	5.73	5.73	5.71 @ 5.73	5.70 @ 5.75	1
August	....	....	5.73 @ 5.77	5.74 @ 5.80	..
September	5.78	5.77	5.76 @ 5.79	5.75 N	5
October	....	....	5.78 N	5.76 N	..
November	....	....	5.80 N	5.77 N	..
December	....	....	5.81 @ 5.85	5.79 N	..
January	....	....	5.82 N	5.80 N	..
February	....	....	5.83 N	5.81 N	..
Crude Oil					
June	....	....	1.18 @ 1.19¾	1.18 @ 1.19½	..
July	1.18½	1.18	1.18 N	1.18¼ @ 1.19¾	4
August	....	....	1.18 @ 1.20	1.19¼ @ 1.20¾	..
September	1.20¼	1.20¼	1.19 @ 1.20½	1.20¼ @ 1.21¾	4
October	....	....	1.19½ @ 1.20¾	1.20½ @ 1.22	..
November	....	....	1.20 @ 1.21	1.20¾ @ 1.22¼	..
December	....	....	1.20½ @ 1.21¾	1.21 @ 1.22½	..
January	....	....	1.20¾ @ 1.22	1.21 @ 1.22½	..
February	....	....	1.21 @ 1.22¼	1.21¼ @ 1.22¾	..

TUESDAY, MARCH 12

Gasoline

June	....	....	5.70 @ 5.73	5.70 @ 5.74	..
July	5.72	5.71	5.71 @ 5.73	5.71 @ 5.75	2
August	....	....	5.72 @ 5.74	5.73 @ 5.77	..
September	....	....	5.74 @ 5.77	5.76 @ 5.79	..
October	....	....	5.76 N	5.78 N	..
November	....	....	5.78 N	5.80 N	..
December	....	....	5.80 @ 5.85	5.81 @ 5.85	..
January	....	....	5.82 N	5.82 N	..
February	....	....	5.84 N	5.83 N	..
Crude Oil					
June	....	....	1.17 @ 1.19	1.18 @ 1.19¾	..
July	....	....	1.17½ @ 1.19½	1.18 N	..
August	....	....	1.18 @ 1.20	1.18 @ 1.20	..
September	....	....	1.18¼ @ 1.20¼	1.19 @ 1.20½	..
October	....	....	1.18½ @ 1.20½	1.19½ @ 1.20¾	..
November	....	....	1.18½ @ 1.20½	1.20 @ 1.21	..
December	....	....	1.18¾ @ 1.20¾	1.20½ @ 1.21¾	..
January	....	....	1.19 @ 1.21	1.20¾ @ 1.22	..
February	....	....	1.19¼ @ 1.21¾	1.21 @ 1.22¼	..

WEDNESDAY, MARCH 13

Gasoline

June	5.73	5.73	5.71 @ 5.73	5.70 @ 5.73	2
July	5.74	5.73	5.73 @ 5.74	5.71 @ 5.73	2
August	....	....	5.74 @ 5.76	5.72 @ 5.74	..
September	....	....	5.75 @ 5.77	5.74 @ 5.77	..
October	....	....	5.76 @ 5.79	5.76 N	..
November	....	....	5.78 @ 5.82	5.78 N	..
December	....	....	5.80 @ 5.85	5.80 @ 5.85	..
January	....	....	5.82 N	5.82 N	..
February	....	....	5.84 N	5.84 N	..
Crude Oil					
June	....	....	1.17 @ 1.19	1.17 @ 1.19	..
July	....	....	1.17½ @ 1.19½	1.17½ @ 1.19½	..
August	....	....	1.18 @ 1.20	1.18 @ 1.20	..
September	....	....	1.18¼ @ 1.20¼	1.18¼ @ 1.20¼	..
October	....	....	1.18½ @ 1.20½	1.18½ @ 1.20½	..
November	....	....	1.18½ @ 1.20½	1.18½ @ 1.20½	..
December	....	....	1.18¾ @ 1.20¾	1.18¾ @ 1.20¾	..
January	....	....	1.19 @ 1.21	1.19 @ 1.21	..
February	....	....	1.19¼ @ 1.21¾	1.19¼ @ 1.21¾	..

THURSDAY, MARCH 14

Gasoline

June	....	....	5.70 B	5.71 @ 5.73	..
July	5.73	5.72	5.71 @ 5.73	5.73 @ 5.74	7
August	....	....	5.72 N	5.74 @ 5.76	..
September	5.75	5.75	5.73 @ 5.76	5.75 @ 5.77	7
October	....	....	5.74 N	5.76 @ 5.79	..
November	....	....	5.76 N	5.78 @ 5.82	..
December	....	....	5.78 B	5.80 @ 5.85	..
January	....	....	5.80 N	5.82 N	..
February	....	....	5.82 N	5.84 N	..
Crude Oil					
June	....	....	1.17 @ 1.19	1.17 @ 1.19	..
July	....	....	1.17½ @ 1.19½	1.17½ @ 1.19½	..
August	....	....	1.18 @ 1.20	1.18 @ 1.20	..
September	....	....	1.18¼ @ 1.20¼	1.18¼ @ 1.20¼	..
October	....	....	1.18½ @ 1.20½	1.18½ @ 1.20½	..
November	....	....	1.18½ @ 1.20½	1.18½ @ 1.20½	..
December	....	....	1.18¾ @ 1.20¾	1.18¾ @ 1.20¾	..
January	....	....	1.19 @ 1.21	1.19 @ 1.21	..
February	....	....	1.19¼ @ 1.21¾	1.19¼ @ 1.21¾	..

FRIDAY, MARCH 15

Gasoline

June	....	....	5.70 @ 5.74	5.70 B	..
July	5.72	5.71	5.72 @ 5.74	5.71 @ 5.73	7
August	....	....	5.74 N	5.72 N	..
September	5.78	5.77	5.76 @ 5.79	5.73 @ 5.76	2
October	....	....	5.77 N	5.74 N	..
November	....	....	5.79 N	5.76 N	..
December	....	....	5.80 @ 5.83	5.78 B	..
January	....	....	5.82 N	5.80 N	..
February	....	....	5.84 N	5.82 N	..
Crude Oil					
June	....	....	1.18 @ 1.19½	1.17 @ 1.19	..
July	....	....	1.18 @ 1.19½	1.17½ @ 1.19½	..
August	....	....	1.18¼ @ 1.19¾	1.18 @ 1.20	..
September	....	....	1.18½ @ 1.20	1.18¼ @ 1.20¼	..
October	....	....	1.18½ @ 1.20	1.18½ @ 1.20½	..
November	....	....	1.18¾ @ 1.20½	1.18½ @ 1.20½	..
December	....	....	1.19 @ 1.21	1.18¾ @ 1.20¾	..
January	....	....	1.19¼ @ 1.21½	1.19 @ 1.21	..
February	....	....	1.19½ @ 1.21½	1.19¼ @ 1.21¾	..

B—bid. T—traded. N—nominal. O—offered.

The above prices for future delivery of gasoline are ex-licensed tanks in delivery areas and include the 1-cent per gallon federal tax.

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GASOLINE and CRUDE OIL FUTURES

as of TUESDAY, MARCH 5th, 1935

GASOLINE CONTRACT

CONTRACT UNIT:
42,000 United States gallons on the basis of measurement at 60 degrees Fahrenheit. Each contract unit must be made up exclusively of one of the deliverable grades specified in the By-Laws.

DELIVERABLE GRADES:
Base Grade (Exchange Grade No. 1): United States Motor Gasoline as per Federal Specification VV-G-101, within the range of 55-59 Octane numbers.

Other Deliverable Grades: Exchange Grade No. 2: Motor Gasoline as per Federal Specification VV-M-571, within the range of 60-64 Octane numbers, at ¼ of one cent per gallon premium above the contract price. Exchange Grade No. 3: Motor Gasoline of the same specification as Grade No. 2, with Octane numbers 65 and above, at ½ of one cent per gallon premium above the contract price.

DELIVERIES:
From storage tanks licensed by the Exchange in the Houston-Galveston area, Texas, at the contract price, and at the Port of New York at a premium of 5/16 of one cent per gallon above the contract price. A tolerance of 2% above or below contract unit is permitted.

QUOTATIONS:
Prices will be quoted in respect to the Base Grade, No. 1. Price fluctuations will be in multiples of one one-hundredth of one cent per gallon.

PRICE FLUCTUATION LIMITATIONS:
Trades for future delivery in any month shall not be made during any one day at prices varying more than one cent per gallon above or below the lowest price of the closing range for that month during the preceding business session on the Exchange.

MONTHS TRADED:
At the beginning trading will be conducted in contracts for delivery during June, 1935, and the eight subsequent months. On and after June 1st, 1935, trading will be conducted in contracts for delivery during the current month and the succeeding eleven calendar months.

TRADING HOURS:
From 10 A. M. to 3 P. M. on each business day with the exception of Saturday, when trading shall cease at 12:00 noon.

COMMISSION RATES:
(U. S. and Canada). Based upon a price per gallon.

(Per contract bought or sold)

	Members	Non-Members
Below 6c	$ 6.25	$12.50
From 6c to 7.99c incl.	7.50	15.00
From 8c to 9.99c incl.	8.75	17.50
From 10c to 13.99c incl.	10.00	20.00
From 14c and above	12.50	25.00

Outside the United States and Canada, a charge equal to the actual cost of cables with a minimum charge of $1.25 shall be added to the above rates.

CRUDE OIL CONTRACT

CONTRACT UNIT:
2,000 barrels of 42 United States gallons each on the basis of measurement at 60 degrees Fahrenheit. Each contract unit must be made up exclusively of one of the deliverable grades specified in the By-Laws.

DELIVERABLE GRADES:
Base Grade: Mid-Continent (Oklahoma and Kansas origin) 36.0-36.9 A. P. I. gravity.

Other Deliverable Grades: Texas, Mid-Continent and California oils, as specified in Section 353 of the By-Laws (the term "grade" covering both the characteristics of point of origin and A. P. I. gravity).

DELIVERIES:
From storage tanks licensed by the Exchange and located in the Houston-Galveston area, Texas, or in the Cushing-Drumright area, Oklahoma; at premiums above or discounts below the contract price, depending upon the grade delivered and the point of delivery (See Sec. 353 of the By-Laws). A tolerance of 2% above or below contract unit is permitted.

QUOTATIONS:
Prices will be quoted in respect to the Base Grade. Price fluctuations will be in multiples of one-quarter of one cent per barrel.

PRICE FLUCTUATION LIMITATIONS:
Trades for future delivery in any month shall not be made during any one day at prices varying more than 30 cents per barrel above or below the lowest price of the closing range for that month during the preceding business session on the Exchange.

MONTHS TRADED:
At the beginning trading will be conducted in contracts for delivery during June, 1935, and the eight subsequent months. On and after June 1st, 1935, trading will be conducted in contracts for delivery during the current month and the succeeding eleven calendar months.

TRADING HOURS:
From 10 A. M. to 3 P. M. on each business day with the exception of Saturday, when trading shall cease at 12:00 noon.

COMMISSION RATES:
(U. S. and Canada). Based upon a price per barrel.

(Per contract bought or sold)

	Members	Non-Members
Below $1.50	$ 6.25	$12.50
From $1.50 to $1.99¾ incl.	7.50	15.00
From $2.00 to $2.49¾ incl.	8.75	17.50
From $2.50 to $2.99¾ incl.	10.00	20.00
From $3.00 and above	12.50	25.00

Outside the United States and Canada, a charge equal to the actual cost of cables with a minimum charge of $1.25 shall be added to the above rates.

FOR FURTHER INFORMATION APPLY TO THE SECRETARY'S OFFICE

COMMODITY EXCHANGE, INC.
81 BROAD STREET, NEW YORK CITY

PIPE LINE CONSTRUCTION

WASHINGTON, D. C., Mar. 18.—The public works administration and the State of Texas have joined hands in an effort to work out a practical scheme of piping natural gas from the Panhandle of Texas to Detroit and St. Louis.

A rough draft of plans for a public corporation in Texas to seek and handle a $60,000,000 loan from the PWA was handed Edward H. Foley, chief of the PWA legal staff, and Secretary Ickes by R. B. Anderson, tax commissioner of Texas, and Scott Gaines, assistant to the state attorney general.

They were accompanied by Charles M. Hay, St. Louis city counselor, and a delegation of six St. Louis aldermen.

Anderson predicted that the Texas legislature would pass quickly any such plan the administration might approve and thereby would permit the State, through the corporation to make an early application for the funds.

Anderson said the State already had the necessary options, and a Fort Worth, Tex., engineering firm had about completed a survey of the route but "we want to be sure of every step we take."

Governor Allred and Secretary Ickes have said the pipe line would not only provide inexpensive gas to the two cities but would help dispose of part of the 1,000,000,000 feet of wasted gas in the Panhandle Field daily.

Anderson said the assurance Detroit had given Texas of taking all the available supply was alone sufficient to justify the project and added he hoped St. Louis officials also would accept Texas' proposition.

The project calls for at least one pipe line and perhaps two from a point about 30 miles north of Amarillo, Tex., either would go "on an air line," as Anderson explained it, to St. Louis and direct route would be followed to Detroit. The Mississippi River would be crossed near the former city, however, no definite route has been considered.

The commission said the work would provide 47,600,000 man hours of work during actual construction and would give 300 families permanent employment in distribution work once the line or lines were laid. Governor Allred has estimated that 415,000 tons of steel would be required to build 25-inch lines capable of handling 400,000,000 feet of gas daily. He said St. Louis and Detroit had a present market for more than 200,000,000 feet daily.

Anderson estimated that the line to Detroit would cost between $40,000,000 and $45,000,000 and both would cost $60,000,000. He said either or both could be constructed in about one year.

The proposal does not contemplate the bonding of the State or pledging of any state assets, Governor Allred has said.

"Success of the project is practically assured if we can get PWA funds to finance it," Anderson said. "Detroit is enthusiastic over the proposition and St. Louis wants it."

Anderson said as soon as his legal setup of the Texas Gas Conservation Corporation is approved by the PWA, it will be submitted to the Texas legislature.

"Then with setting up the authority, we will make a formal PWA application for the money we need," he said.

Anderson said the PWA loan would be financed through bonds issued by the corporation. The securities would be given PWA as collateral.

GASOLINE LINE CONTRACT

Truman & Smith Construction Co. of Eldorado, Kans., has been given a contract to lay the new Cimarron Valley Pipe Line Co.'s new line from Hutchinson to Superior, Neb., with work to start at Hutchinson and at the Nebraska end of the line at once. It is a 6-inch line to carry gasoline from the Champlin Refining Co. at Enid to Hutchinson and north to the Nebraska town. There is a possibility the line may later be extended to Sioux City, Iowa.

ALBERTA OIL PROBE

EDMONTON, Alberta, Mar. 16.—Donald MacLeod, M.L.A. for Stony Plain, has presented in the Alberta legislature a resolution asking for an investigation into the costs of fuel and lubricating oils in Alberta.

GASOLINE TAX PAYMENTS

EDMONTON, Alberta, Mar. 16.—An official statement in the Alberta legislature shows that payments of gasoline tax due the province from oil companies and other collecting agencies amounted to $40,632.

Tank Car Gasoline Grows Stronger in Chicago Area

(Continued from Page 36)

quirements. Consumer demand is seasonally slow.

East Texas Material

With a few exceptions, East Texas has ceased to move gasoline into this market. The few cars located of such material have been picked up by the major buyers. At the same time a little nervousness has been exhibited over the latest injunction proceedings directed against the tender board in East Texas.

Kerosene

Imminence of the kerosene season is keeping this product firm, with good instructions received by sellers. Tractor fuel business this year is expected to set a new record. Some sellers are openly predicting higher prices. Quotations for tractor fuel as such are keeping pace, or exceeding, those for third-grade gasoline. Offerings are limited.

Industrial Oils

Industrial gas and fuel oils reflect little or no change in attitude of buyers or the position of sellers and are reasonably firm on limited demand. Prices have not changed. Tone in general is quiet.

Lubricants

The better tone in various sections of the lubricants market is cheering to the trade, especially since it comes close to a time when motor oil demand should be picking up in the near future. Buying is still quite moderate by both compounders and jobbers.

Wax

Wax is weak and the newly reduced prices are not attracting much buying. Stocks continue to be rather unwieldy.

Solvents and Naphthas

Solvents and naphthas are quiet, with tank car market holding quite well despite some lower priced Michigan material. Tank wagon prices were reduced by leading sellers in Chicago March 12.

Coke

Coke is dull, but prices are still holding at earlier established levels, and the market seems fairly firm.

GRANUM PETROLEUM MEETING

GRANUM, Alberta, Mar. 16.—Shareholders of the Public Petroleum Corp., Ltd., of Granum held their fifth annual meeting here recently when the following directors were elected: W. Sherman, R. A. Macleod, M. Muhly, B. Walker and W. Laughton. The company, which carries on the co-operative marketing of petroleum in the Granum area, reported a successful year's operations.

I OUGHT TO KNOW WHERE THE LINE IS — I LAID IT TWENTY YEARS AGO!
YOUR MEMORY'S BAD - OLD TIMER, OR THE PIPE LINE HAS MOVED - BECAUSE I AM STANDING ON YOUR PIPE!
PIPE LOCATOR

The C-R-C Locator, which works on the radio principle, will save you much time and expense in locating buried pipe quickly, accurately and positively. Depth pipe is buried makes no difference. Illustrated descriptive pamphlet will be mailed on request.

CRUTCHER-ROLFS-CUMMINGS-INC.

Specializing in

PIPE LINE EQUIPMENT AND MATERIALS

HOUSTON, TEXAS U. S. A.

Clipped from Page 26, National Petroleum News, Feb. 13, 1935.

Is greater "Oiliness" needed in modern engines?

If this question is correctly answered in the affirmative either for present engines, or if the trend is definitely toward such a need in the near future, the next move is to learn how to produce oils with greater film strength.

Continental KNOWS HOW!

Conoco Germ Processed Motor Oil has by test, 2 to 4 times greater film strength than straight mineral oil!

Conoco Jobbers and Dealers Sell an Oil Years Ahead of the Others—and Sales Prove It!

Continental won't have to LEARN how—Continental KNOWS how to produce oil with greater film strength! That oil—the new Conoco Germ Processed Motor Oil—has been on the market since April, 1934.

* * *

Is oil of greater oiliness and film strength needed? We believe it is—decidedly!

Today's engines develop twice the horsepower of engines of ten years ago. Ratings now range from 70 to 180 h.p., and the average is over 100. Yet engines are little, if any, larger.

The load on bearings has increased so greatly that automotive engineers have turned to new types of "hard" bearings to meet the new needs. Crankcase temperatures have gone up, too. The conditions under which oil must lubricate have changed radically.

High Film Strength Is Needed!

Today, oil must be judged by a new set of standards. Viscous lubrication is not enough. We have entered an era of "thin film" lubrication. As the load on bearings increases, ordinary viscous lubrication becomes inadequate and the oil must have oiliness to do its job. As the load increases still further —to levels undreamed of ten years ago—even oiliness is not enough; lubrication then depends entirely on film strength. Thin-film lubrication demands oil with extremely high film strength.

Over-Refining May Cut Film Strength!

Oil refined by old methods may have a fair degree of film strength; but such oil may form too much carbon and sludge.

Carbon and sludge-forming tendencies may be minimized by many new processes. But it is generally recognized that over-refining may actually reduce oiliness and film strength. The resulting oil is most certainly purer—but it may be a worse lubricant!

There is a way to make pure, clean oil, free of carbon and sludge troubles, yet with high film strength and oiliness. Continental discovered it after years of ceaseless research. That way is by the patented Germ Process.

The Germ Process Adds Film Strength!

What is the Germ Process? It is the addition of a very small amount of concentrated oily essence to highly refined oil. The essence is not an animal, vegetable or mineral oil. It is an entirely new creation of matter, made for the first time in this world in a Continental laboratory.

Germ Processing puts oiliness and film strength into the oil. Tests on Timken, Almen, and other oil-testing machines have proved that Conoco Germ Processed Motor Oil has *more oiliness and 2 to 4 times more film strength than any straight mineral oil!*

Germ Processed Oil is not corrosive on copper-lead, cadmium, and other new bearings. It has been tested on every type of new bearing now in use. One of the country's leading makers of lead-bronze bearings made extensive tests and reported not only no corrosion but better lubrication of his bearings.

1934 a Year of Success for Conoco!

As a jobber or dealer, you want to know what this means in terms of motor oil sales.

Since April, 1934, Conoco jobbers and dealers have offered their customers an oil years in advance of straight mineral oils. Motorists must like Conoco Germ Processed Oil, for sales have increased 60.4% since its introduction. This is not an "advertising" figure—it is taken straight from our records.

Conoco Germ Processed Motor Oil has been backed with some of the most outstanding advertising in the industry. On March 20th., another big campaign on this oil breaks in 1,363 newspapers with 10,500,000 circulation and in 12 leading farm papers with 2,000,000 circulation.

Continental Stays in Front!

The introduction of a tested, high-film-strength oil is typical of Continental's policy of staying ahead. Conoco jobbers and dealers also offer their customers in Conoco Bronze Gasoline a high-volatility gasoline second to none and in the Conoco Travel Bureau a trip-planning service recognized as America's outstanding free national travel service.

One of the striking newspaper advertisements in the current Conoco campaign.

We will be glad to talk to good jobbers and dealers who can see the profit possibilities in Conoco products and Continental's modern merchandising methods. We think it will pay you to write our nearest division office and ask a representative to call —without obligation, of course.

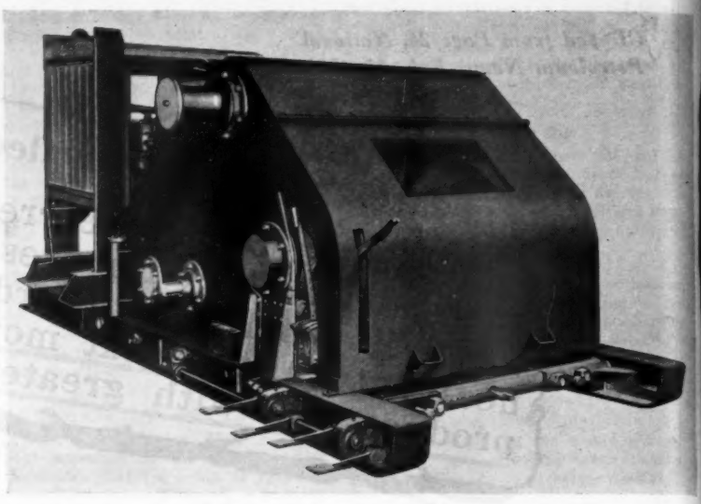
CONOCO

CONTINENTAL OIL COMPANY

ESTABLISHED—1875

DIVISION OFFICES: Albuquerque - Butte - Chicago - Denver - Fort Worth - Kansas City - Lincoln - New York - Ponca City - Richmond - Salt Lake City

Light Rig Adaptable for Gasoline, Diesel or Electric Motors



Right side view (from front) of new all enclosed, light, single unit drawworks showing controls

By NEIL WILLIAMS
Gulf Coast Bureau, The Oil and Gas Journal

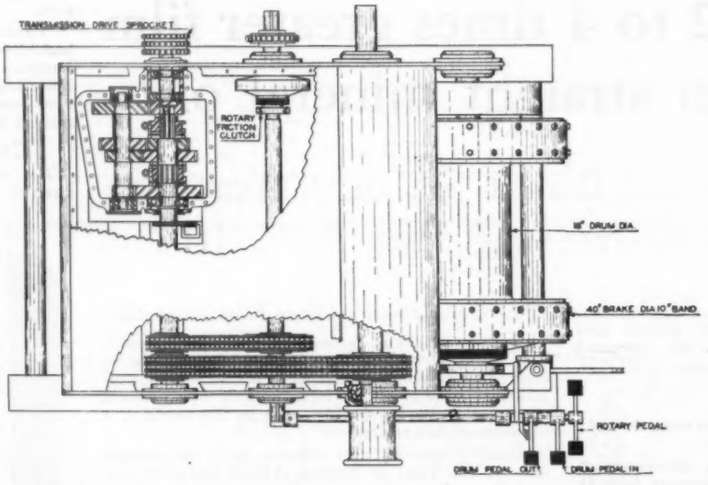
HOUSTON, Tex., Mar. 18.—A light weight, highly unitized drawworks adaptable to the use of constant torque prime movers, such as gasoline and Diesel engines and electric motors, has been developed by the Portable Rig Co. at Houston. The first unit now is being moved from the shop to Eunice, N. Mex., where it will be put in regular field operation by the Gypsy Oil Co.

Development of this equipment fills a long felt need on the part of the industry. In the past, the application of gasoline, Diesel or electric power to drilling has been limited to a large extent to the heavier rigs as the necessary speed reducing and reverse gears available have been of such size and so costly that they have not been practical on light outfits. Operation of light rigs generally has been confined to the use of steam because in direct drive this is the only power which is flexible and by which variances in speed can be obtained by slowing up or speeding up the engines.

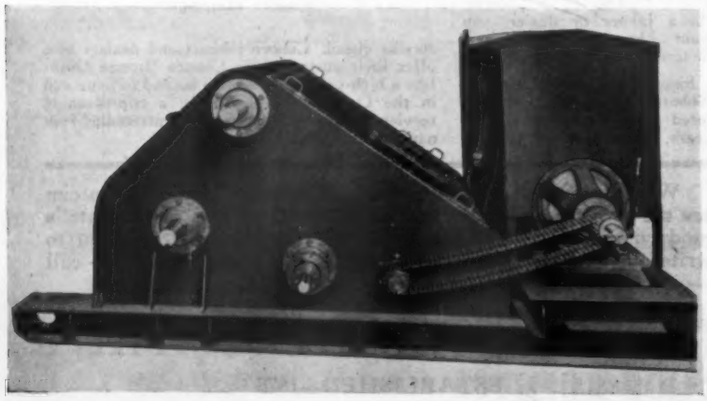
As known, gasoline and Diesel engines and electric motors are designed to obtain their maximum of efficiency at definite fixed speeds, or revolutions per minute. They exert their greatest pull at high speeds and by momentum, while, vice versa, the minimum of power is available at low speeds. In drilling operations, the greatest amount of power often is needed at slow speeds and, consequently, to obtain this, a fixed speed motor would have to be "gunned," as it cannot be started up from a slow pull.

In the new drawworks developed by Portable Rig Co., adaptation of fixed speed engine power is provided by a specially built, heavy duty transmission unit on the counter shaft. This transmission, which operates similarly to a truck or automobile gear shift, contains four forward and three reverse speeds which give ample flexibility and at the same time permit the running of an engine at a constant speed. Friction clutches on both the rotary and the drum, replacing the conventional jaw type clutches, permit the gradual application of the power to the drawworks and the easing in of a slow pull. By this, all jars and sudden application of power characteristic with the jaw type of clutch are eliminated, which gives the additional flexibility of power needed with use of fixed transmission gear speeds.

The unit represents the utmost in compactness. All of it is set up on one set of steel skids with an over-all height of only 6½ feet and a length of only 10 feet 2 inches. It can be moved intact on a single truck, and was designed that it would not have to be dismantled except for any repairs that might become necessary. Its weight, including the transmission unit, is only 19,000 pounds.



Drawing of new type, all enclosed portable drawworks with special transmission drive designed for four forward and three reverse speeds



View of left side of new, all enclosed, light weight, single unit drawworks showing engine hook-up. The drawworks is adaptable to any power and was designed particularly to make use of Diesel or gas engine, or electric motor drive by use of special transmission gear shifts

Lubrication System

At the same time the equipment is just as complete as on the larger rigs and also there are a number of additional facilities and features embodied in it. Of particular interest is the fact that all working parts are entirely enclosed with the transmission, shafts, chains and sprockets, rotary friction clutch and everything except the drum itself being contained in a gasket tight, sealed compartment. In this compartment, the parts can be kept free of any dirt and in a constant bath of oil, prolonging the life of the equipment and minimizing repairs and replacements.

In the lubrication system, a small pump picks up the oil from the sump in the bottom of the unit, circulates it through small lines which reach all moving parts in the compartment. A stream of oil is poured continually over all chains and bearings. In each cycle, the oil is thoroughly filtered so that clean oil always is in circulation. Moving parts, such as the drum shaft bearings, not in the sealed compartment and not reached by the oil, are lubricated by forced feed greasing. For this, all greasing cups are centralized at one place by flexible hose connections to points of greasing.

Drives

All drives in the unit are by use of special, high-speed, double and triple width, double roller chain. These include the drives from the counter shaft to the line shaft and to the rotary shaft, and from the line shaft to the drum shaft. The shafts are of the barrel rolling type made of alloy steel. No friction bearings are used, the bearings being of the SKF self aligning type.

The drum is free rolling with the bearings on the shaft in the barrel of the drum. It is 30 inches wide with a diameter of 18 inches. The brakes are self energizing and of special design by the Portable Rig Co. They have a 40-inch diameter with a 10-inch band and have 90 per cent of their area in contact. They are available either water or air cooled.

The drum and front of the unit also is entirely enclosed except for a small opening for the line. The drum shaft is extended on the outside to permit the application of a cable tool spudding unit. Also, the rotary shaft is extended beyond the rotary drive sprocket to permit connections to any water pumps, mud mixing devises or shakers, or anything else that might be needed.

All controls are at the driller's position. The transmission control is operated much like a gear shift on a truck or automobile, with the exception of the additional forward and reverse speeds. Additional controls include the brake, motor clutch control, drum friction clutch, and the rotary clutch.

The drawworks is being provided in two sizes, a smaller one for wells down to 3,000 feet, and a slightly larger one for wells as deep as 5,000 feet. The latter is designed to be driven by a four or six cylinder gas or Diesel engine of 150 horsepower, or the equivalent in electric power. With this it is capable of exerting a single line pull of 43,000 pounds.

The covering of the unit is built of ¾-inch still bottom plate, which provides a light weight, yet durable protection.

EXPAND USES FOR ASPHALT

The urgent need of a marked increase in the mileage of improved rural and farm-to-market highways in the United States is illustrated in a bulletin of the Low Cost Roads Association.

Because of the dangerous concentration of traffic on the primary highways and the high speeds at which motor cars are driven on cross country trips the death rate per accident on the rural highways was more than 100 per cent greater than the average for all other accidents combined. There were 19,560 killed in 250,490 rural highway accidents in 1934.

"A highway program calling for the construction of low-cost traffic relief roads and the widening of existing pavement on primary highways by means of low-cost surfacing of the 'shoulders' will go far in reducing the alarming rate."

Stronger, Tighter, Safer Decks

Battery of Low 500-bbl. Parkersburg Bolted Steel Tanks with Corrugated Decks.

CORRUGATED DECKS . . . the first outstanding improvement in tank deck design since the development of the bolted steel tank. This is an exclusive patented feature obtainable only on Parkersburg Tanks.

Deep corrugations pressed into each deck segment and pressed grooves along the radial seams give an overall stiffness to the complete deck that is not obtainable in other types of construction. The absence of rafters and channels for deck support reduces the source of scale in sour crude areas and eliminates the danger of collapse from corroded members.

All sheets are corrosion-resisting, copper-bearing steel, aluminum coated; the underside of deck segments coated with REELKOTE, a Bakelite base enamel highly resistant to the corrosive action of sour oils and sulphur gases.

Hundreds of satisfied users will attest the fact that the Corrugated Deck is the strongest, tightest and safest on the market.

Specify: bolted steel tanks with corrugated decks, gas-tight fittings, and fire-proof steel stairways and runways . . . *by Parkersburg.*

Note how channels are an integral part of the sheets and shaped to prevent bolt heads from turning. This assures perfectly matched, gas-tight joints, while increasing the stiffness of the deck.

Gas-Tight Accessories

Parkersburg gas-tight accessories provide positive protection by automatically controlling both pressure and vacuum. Made of aluminum throughout . . . hand-ground for accurate seating . . . fool-proof in operation.

3-in-1 Valve

A valve for either pressure or vacuum relief or as a gauge hole cover. Simple, automatic . . . no springs to break . . . no gaskets to deteriorate . . . no valve stems to stick. An exclusive safety feature is that cover cannot be opened without checking its function as a valve.

SERVICE

● A complete Service Organization is maintained at each District office; practical production engineers are always ready to assist producers --- large or small --- in the solution of their problems

Complete stocks of tank parts and a speedy erection service are available at all Parkersburg Branches.

THE PARKERSBURG RIG AND REEL CO.

PARKERSBURG, W. VA.

NEW YORK · TULSA · DALLAS · HOUSTON

A step forward in Refinery Pipe

1. High resistance to corrosion
2. Improved strength at high temperatures
3. Superior quality electric-furnace steel
4. Accurately controlled heat treatment
5. Unusual resistance to oxidation or scaling
6. Exceptional ductility for bending and forming

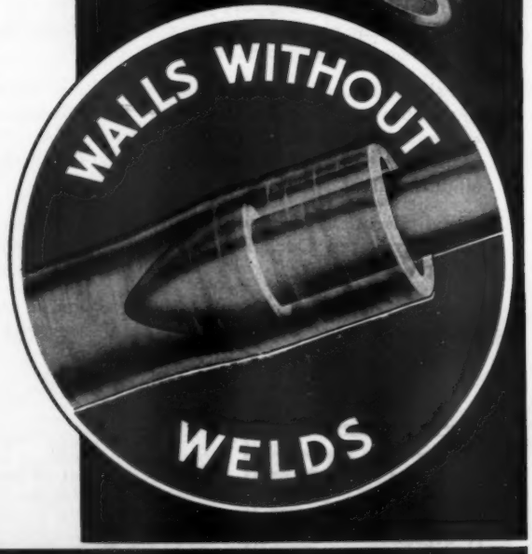
These are six good reasons why NATIONAL 4%-6% Chromium Pipe and Tubes should be used for refinery still tubes where high pressures, high temperatures, and severe corrosive conditions are involved. They represent the main advantages that have led to increasing use of this material by leading refiners, not only for still tubes, but also for furnace tubing, hot oil lines, tubular parts of heat exchangers, condenser tubing, return bends, etc.

It should be noted also that NATIONAL 4%-6% Chromium Pipe and Tubes are seamless—no welds, therefore, uniform wall strength throughout. They are available in a wide range of diameters, wall-thicknesses, and lengths and can be furnished with plain, upset, or otherwise formed ends as desired. Sentry drilled (an exclusive feature) when so ordered.

Write NATIONAL engineers and metallurgists on your problems of application. Information and descriptive literature will be sent on request.

NATIONAL TUBE COMPANY • Pittsburgh, Pa.
Export Distributors—UNITED STATES STEEL PRODUCTS CO., New York, N. Y.

United States Steel Corporation Subsidiary



NATIONAL TUBE COMPANY

4%-6% CHROMIUM

SEAMLESS PIPE AND TUBES WITH ½% MOLYBDENUM

Some Physical and Chemical Questions Relating to Acid Treatment of Oil Wells

By HARRY F. WRIGHT[1] and ROY L. GINTER[2]

The practice of acid treatment of oil and gas wells has spread so rapidly that there has been little time on the part of those engaged in the work, and less for those indirectly concerned in it, to give real study to the problems involved. This paper presents some of the results of studies made during the past two years. They are conclusions incident to the solution of immediate problems rather than the deliberate results of research. The paper is presented not as final and definite conclusions on the various subjects discussed, but rather as a preliminary study pointing the way to more mature and deliberate investigation.

The primary purpose of acid treatment is to speed up the rate of production of oil and gas, and if possible to increase the total amount ultimately to be recovered. If only the rate of production is increased, the enhancement of present values of properties through shortened life of investment, well justifies the use of acid. If we may likewise add significant amounts to the oil ultimately to be recovered, the process may indeed prove to be one of the major developments in the production of oil.

Porosity

In a discussion of the effects of acid treatment upon reservoirs containing oil and gas, it is pertinent to consider briefly the porosity and permeability of various types of rocks, and the method of accumulation and mode of occurrence of oil therein. The porosity of a reservoir determines largely the amount of oil that may be contained within it; its permeability is the chief factor which controls the amount which may be taken out and the rate at which it may be recovered.

The accumulation of oil and gas in a limestone reservoir may be effected in many ways, depending upon the nature of the interstitial spaces within the rock.

The pore spaces may be classified generally as (1) primary porosity; (2) solution cavities; and (3) fractures and fissures. Any or all of these may have been modified by later deposition of crystalline minerals from solution in infiltrating waters, or of finely divided insoluble materials carried in suspension.

In limestone having only primary porosity, there is much evidence to show that such porosity is neither continuous (Murray, A. N., "Limestone Reservoirs in Northeastern United States and Ontario, Canada," Econ. Geol., Vol. 25 (1930), p. 455; Papers on Limestone in A.A.P.G. volume "Problems of Petroleum Geology," 1934) nor homogeneous. Particularly if the oil is indigenous to the formation, or not under effective pressure, it may occur in more or less isolated patches irregularly distributed throughout the formation. In such cases the use of acid may be effective locally in making porosity continuous, yet fail to yield important increases in production.

The great majority of limestone oil reservoirs are those having secondary porosity as solution cavities. In these the pore spaces are both interstitial and cavernous and range in size from microscopic upward. In such reservoirs it is obvious that accumulation of oil must have taken place subsequent to formation of the cavities, for all previously deposited oil would have been flushed out during the solution process.

Where oil occurs in fractures acid treatment may be effective or not, depending entirely upon the nature of the fractures themselves. If these are large and continuous and the openings appreciably more than capillary in size, so that a minimum of resistance is afforded to oil and gas moving toward the well, no effective work will be done by acid in further enlarging the passages. Where the fractures are small, even though continuous, tremendous benefit may accrue from enlarging the passages with acid and from destroying thin walls between them. It is quite possible that many instances of failure of acid to restore to life limestone wells which had large initial productions resulted from failure to do effective work in cavities already large enough. Particularly where the formation pressure is very low, flow resistance may not be proportionally lowered even if the acid does affect materially increased permeability.

In reservoirs which have had a high porosity, recrystallization from solution of soluble minerals may have reduced the size of some of the passages, and completely separated them from each other. Such a rock may have a high porosity and little or no permeability. In reservoirs of this type successive acid treatments, reaching out farther each time should be continuously effective until the passages are opened from well to well and production interference sets in.

Porosity in Sandstones

The effective porosity of a reservoir depends upon the amount of communicating pore space. This in turn depends upon the shape and arrangement of the grains, the proportions of fine and coarse materials and the degree of cementation.

The most compact arrangement of spheres, regardless of diameter, results in a porosity of about 26 per cent. With very few exceptions this is far above that of sandstone oil reservoirs now known. Because of the packing of grains of irregular size and shape, and the cementing together of these grains into a compact mass, porosities are usually far below this figure.

Pore space between grains of sand may be partly or wholly filled by an admixture of clayey particles, or by mineral cements. Primary clay and, to a great extent, secondary cementation, usually result in a tight sand with relatively low porosity. Where the cementing material is acid soluble, increase in permeability of the sandstone by acid treatment may result in permanent benefit to the well. The solubility analysis of a great number of sandstones has shown a surprisingly large percentage of acid-soluble minerals in well-known sandstone reservoirs. Beneficial results of acid treatments in sandstones are many, but they are hardly as consistent as solubility analyses of the various formations would indicate. It is probable that this irregularity is due to lack of saturation and/or low formation pressure, as much or more than to the failure of acid to produce effective permeability.

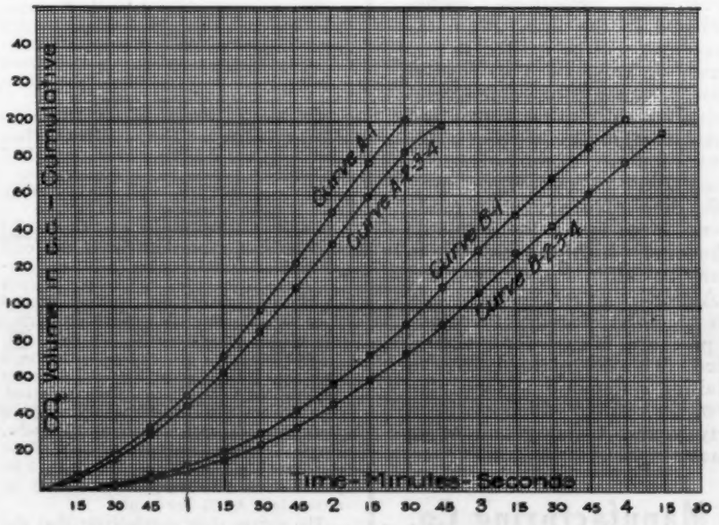


Fig. 1

Curve (A-1) 4 molal HCl, dry Dolomite
Curve (A-2-3-4) average HCl-HNO_3 mixtures with dry Dolomite
Curve (B-1) 4 molal HCl, oil wet Dolomite
Curve (B-2-3-4) average HCl-HNO_3 mixtures with oil wet Dolomite

Permeability

It is well understood that there is no direct connection between porosity and permeability in any given reservoir horizon; and that a reservoir of high porosity and possibly a high degree of saturation may have a low rate of production and low ultimate yield. In effect, the flow of oil and gas through the pores of the reservoir is analagous to the flow through horizontal pipes. Efficiency decreases rapidly with the length of the line, and even more rapidly as the number of bends and other obstructions is increased. Efficiency may be so far reduced that flow of oil may cease entirely, and the gas stratify and flow along above the oil.

Viscosity and specific gravity likewise effect the velocity of flow. Particularly in old fields, and in newer ones where gas has been wasted through inefficient operation, increased viscosity has added to the difficulty of passage of the oil through the more restricted pores of the rock.

The introduction of acid serves to break down the resistance to flow of oil and gas by enlarging the more restricted apertures, rounding the corners and otherwise smoothing the walls of the passages. Probably new quantities of oil, hidden behind thin walls or already connected through capillaries too small to permit free passage are afforded an opportunity to escape.

In order to have some idea of the order of magnitude of increase in porosity and permeability effected by acid, laboratory tests were conducted upon two cores, one of Misener sand and one of Wilcox sand. These were selected because (1) they were readily available, (2) they had low percentage of soluble material, and (3) it was believed they were uniform enough in both porosity and permeability to give significant results.

The Misener sample carried only 11 per cent of soluble calcite cement, and the Wilcox sample contained 21 per cent of magnesium limestone cement. Tests were made with acid concentration 14 per cent HCl.

	Porosity		Permeability	
	Before	After	Before	After
Misener sand	8.31%	15.60%	.031 darcy	.371 darcy
Wilcox sand	16.91%	23.0%	core disintegrated	

It is indeed interesting to note that with even so low acid-soluble content as 11 per cent, the porosity of Misener sand was increased 50 per cent and the ability of the sample to permit flow of fluid was increased 12 times! The Wilcox core disintegrated so badly that only a small piece was recovered, barely enough to make a test for porosity. The permeability tests were made with equipment which has previously been described in detail (L. G. E. Bignell, The Oil and Gas Journal, August 9, 1934). Porosity tests were made by the Melcher-Nutting method.

Saturation

An unexpected low yield from a new well or field is frequently ascribed to "low saturation." The same reports come from field examination of cores, where they show only a small amount of oil. This terminology might properly be applied to a new core from an old property, where some of the fluid has been removed. Experience shows that in all probability if the core is from virgin territory, the pore space is 100 per cent saturated with oil, gas, water, or all three. What is usually termed "low saturation" is in reality low porosity.

Reactions of Mineral Acids With Limestone and Dolomite

The reaction of mineral acids with limestone and germain rocks is essentially elementary. While any one of several acids might be used for opening up the formation in oil and gas wells, hydrochloric acid is the more desirable. Its cost is nominal and it can be handled with comparative ease and safety. The

[1]Geologist and engineer; [2]consulting chemist; Williams Brothers Well Treating Corp.
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resulting products of the reaction are water, chlorides of calcium and magnesium which are readily soluble in water, and carbon dioxide (CO_2) gas. All are harmless inert fluids which are readily removed from the well by ordinary production processes after the treatment is completed.

Sulphuric Acid

The use of sulphuric acid would result in the production of insoluble calcium sulphate. This would be precipitated within the pores of the sand where it would likely cause the clogging of the producing horizon, and be troublesome to handle. The sulphate even causes a hazard in connection with the use of hydrochloric acid in wells where sulphate content of the formation itself or of waters within it may be high. The solubility product of calcium sulphate is exceeded with the use of 14 per cent hydrochloric acid containing more than three-tenths per cent (.3%) sulphate (SO_4), and may result in precipitation of insoluble sulphates in the raction of hydrochloric acid and limestone. For this reason it has been and is our practice to restrict the sulphate content of the acid to three-tenths per cent or less.

Hydrofluoric Acid

It has been suggested (Putnam and Fry, Ind. Eng. Chem., V. 26, No. 9, p. 923, 1934) that hydrofluoric acid might be used for the treatment of Siliceous limestone and limey sandstones. There are practical difficulties in the use of this acid. The products resulting from its reaction are insoluble in water and in hydrochloric acid, and there is no point in dissolving out one substance only to replace it with another. Another difficulty is the public health hazard that might result from the contamination of water supplies with fluorides. Smith and others (Smith, Lantz and Smith, Ariz. Agr. Expr. Sta., Tech. Bull., No. 32, 1931) and many others show strong evidence that the defect of human teeth called "mottled enamel" is caused by water supplies contaminated with fluorides. The limit of tolerance is about two parts per million fluoride (F). The industry is well aware of the difficulty of properly caring for production and refinery wastes, and anything harmful to health in quantities so small as two parts per million would add seriousness to an already difficult situation.

In order to test the formation of sludges insoluble in hydrochloric acid by the raction of hydrofluoric acid and silica in contact with oil-well brines the following demonstration was made. A solution was prepared by saturating a 40 per cent hydrofluoric acid with silica, prepared from sodium silicate. This solution direct, and diluted with one volume of distilled water produced precipitates when added to oil-well brines listed here as samples Nos. 1 and 2, as follows:

	Sample No. 1	Sample No. 2
Location	Rogers County, Oklahoma	Chautauqua County, Kansas
Depth	400-450 ft.	1,150-1,200 ft.
Formation	Bartlesville sand	Peru sand
Calcium (Ca)	330 ppm	4,992 ppm
Magnesium (Mg)	180 ppm	2,096 ppm
Alkalis (Na, K)	6,423 ppm	31,634 ppm
Chloride (Cl)	10,713 ppm	63,663 ppm
Sulphate (CO_4)	0 ppm	0 ppm
Bicarbonate (HCO_3)	524 ppm	133 ppm
R_2O_3	40 ppm	64 ppm
Total solids	17,943 ppm	102,514 ppm

Hydrochloric-Nitric Acid Mixtures

There has been some comment and many queries relating to the efficiency of mixtures of acids, commonly hydrochloric and nitric; and the use of "intensifiers," i.e., some substance added to acid which speeds up its reaction, with dolomite in particular. We know of no substance having the latter property, and we have no theory supporting its concept.

As to the former, certain tests were made with moisture-free dolomite and dolomite saturated under low pressure with 35.5° A.P.I. crude oil. The recapitulated results are presented in Figure 1.

The constants were dolomite 3 grams, size 4-8 mesh, dry; acid volume 5 cc.; acid strength 4 molal. The variables were different proportions on an equivalent weight basis of hydrochloric and nitric acid. These proportions were:

Proportion of Test A-1, 1 HCl to 0 HNO_3; Test A-2, 4 HCl to 1 HNO_3; Test A-3, 3 HCl to 2 HNO_3; Test A-4, 2 HCl to 3 HNO_3.

The same mixtures were used in the A and B series of tests.

Curve A-1 represents the average of two tests of approximately 14 per cent hydrochloric acid. Curve A-2-3-4 represents the average of two tests for each of the three mixtures. The mixed acid tests agreed so well with each other that the results appear as one curve.

The B curves are the same averages as the A series, except that the dolomite was wetted with oil as above described. The dolomite used in the test was a Hunton core from Section 13-22s-2w, Kansas, whose analysis is CaO, 30.54 per cent; MgO, 18.59 per cent; R_2O_3, 1.80 per cent; acid residue, 1.86 per cent; ignition loss 44.33 per cent.

The curves show conclusively that the rate of reaction is not speeded up by the addition of nitric acid, either with dry or with wet dolomite. While the difference is but little if any greater than the experimental error, both tests show a faster reaction with hydrochloric acid alone. It is significant also that the rate of reaction on the oil-wet dolomite is about one-half that on the dry dolomite. We see no reason to believe that the results indicated would not hold true for limestone.

Concentration of Acid

The commercial hydrochloric acid used in well treatment work is designated in bulk shipments as 18° Be. or 20° Be. These are respectively, approximately 28 per cent and 31.5 per cent hydrochloric acid. The acid is cut with water at the bulk stations or at the well to the desired concentration.

Opinions differ somewhat among operators and engineers as to the most efficient strength of acid to use under any given condition. Early in 1933 we examined this question, and concluded that for all practical purposes concentration should not be lower than about 7 per cent nor higher than 18 per cent. The amount of limestone, or rather of carbonates, dissolved by the acid is in proportion to the weight of the respective substances. A given weight of hydrogen chloride (HCl) will do just so much effective work in disintegrating limestone or dolomite regardless of the proportion of water in which it may be contained. Approximately 1 cubic foot of limestone is dissolved in 50 gallons of commercial concentrated acid, or 100 gallons of the 14 or 15 per cent acid which is the common treating solution.

But the rate of the reaction is an entirely different matter. Some recent tests confirm opinions earlier formed that the rate of reaction is controlled by concentration of acid, temperature and contact surface.

Figure 2 presents a study of reaction rates as affected by concentration of acid. Percentages of HCl are as shown on the plates, and the constants are the same as used in tests shown in Figure 1. The specimen examined is the same Hunton core as in Figure 1. No temperature change except that due to the heat of reaction is involved. Each curve is the average of two tests. The intersecting curve shows the time for the evolution of half the CO_2 calculated on the basis of original acid concentration with dolomite in excess. The rate was determined by measuring at intervals the amount of CO_2 evolved.

The curves show a considerable spread in the rates of reaction as between the high and low concentrations. It is probable that these curves are shifted somewhat to the left due to the heat evolved in the reaction. The rate of reaction, in terms of amount of dolomite consumed per unit of time definitely increases with the acid concentration, and the time required to achieve any fraction of the reaction is increased by lowering the concentration of the acid. Study of these curves and comparison with Figure 1 gives some idea of what may be accomplished in the bottom of a well hole by merely changing the strength of the acid solution.

Since the rate of reaction varies with the strength of acid solution, and since the amount of carbonate dissolved is likewise greater as per cent of acid is increased, the inquiry is often made "why not use it full strength?" There are two principal reasons.

The difficulties of properly inhibiting the acid become greater with concentrations above 14 or 15 per cent, and the inhibitors are effective for shorter periods. This affects both the handling of the acid preparatory to the treatment, and its conduct in the hole after it is placed.

Another serious difficulty is that with

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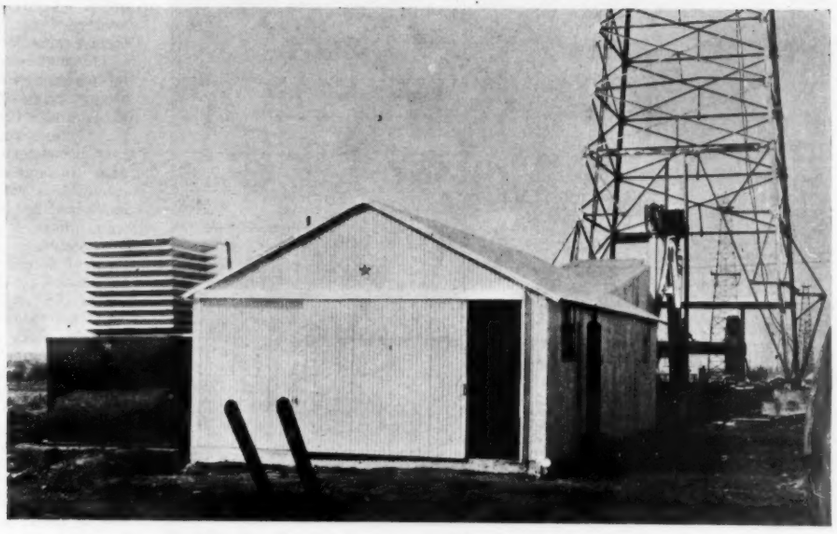

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many limestones in high concentrations of acid a gelatinous coating forms on the surface and retards the reaction. This phenomenon likewise has been observed by a number of geologists in the work of differentiating various formations on the basis of acid solubility. The phenomenon appears at a concentration of around 18 per cent and becomes troublesome at 20 per cent. It is our opinion, substantiated by some laboratory work, that the trouble is due largely to argillaceous matter contained within the limestone. In a recent paper James H. Gardner (Tulsa Geological Society, 1934) pointed out that in many caves and caverns in limestone almost unbelievably large quantities of argillaceous silt and slime remain after solution of the limestone and are found along the walls and floors where they could not possibly have been deposited by running water.

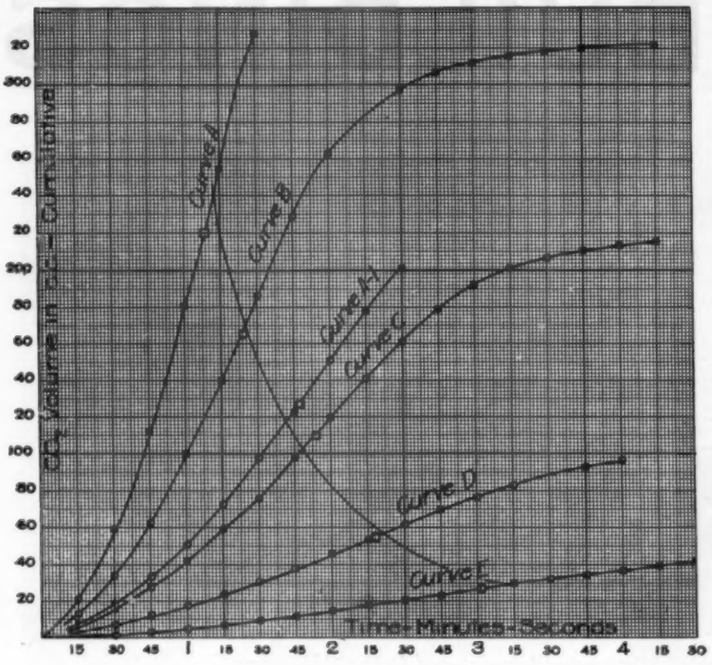

Fig. 2

	HCl Per cent		HCl Per cent
Curve A	22.4	Curve C	11.2
Curve B	16.8	Curve D	5.6
Curve A-1	14.0	Curve E	2.8

□ = time of 50 per cent of reaction

It is the viewpoint of some that the heavier residual liquor from, for example a 20 per cent acid, having a density of about 30° Be. and a viscosity and surface tension higher than solutions from lower concentrated acid, offers greater resistance to the formation pressure and thus retards the work of getting the well back on production. This may be true, but it is our opinion, not fully substantiated by data, that in general the greater the difference between the surface tension of the aqueous phase and the oil, the less is the likelihood of forming emulsions. This conclusion is partly borne out by experience with some oil well emulsions.

Aside from the fact that a given weight of acid will react with a given weight of limestone or dolomite, a dilute acid acts more slowly. Thus, with quick reacting formations a dilute acid can be pushed farther from the open hole than can the same volume of strong acid under the same pressure head.

Temperature

Temperature affects the rate of reaction, but not the amount of limestone disintegrated by a given quantity of acid. In some laboratories solubility tests are made by placing the sample in cold acid for 48 hours or longer; and in others the reaction is hurried to completion in a short time by the application of heat. Check tests of the two methods gave results which agreed within practical limits of error.

Heating is accomplished either by mechanical or chemical means. In some cases heat-exchange units have been used, utilizing the heat of the exhaust gases from the truck. In other cases heating has been accomplished by following the acid with heated oil.

Heat-generating chemicals have been used in oil wells for many years, chiefly in connection with paraffin removal. Applications of caustic soda and aluminum, calcium carbide and water, etc., have been quite common. Reistle and McQuarrie in later years and R. Van A. Mills (Reistle, C. E., Jr., U. S. Bureau of Mines, Tech. Paper 414, 1928. McQuarrie, J. M., The Oil and Gas Journal, November 10, 1932. Mills, R. Van A., U. S. Bureau of Mines, R. I. No. 2,550) in an early publication have gone quite fully into this subject.

Attempts have been made to use heat-generating chemicals with acid, and in some cases good results have been reported. Ranney (Bignell, L. G. E., The Oil and Gas Journal, July 9, 1931) used calcium carbide with his acid treating method and obtained an increase in temperature, but at the expense of acid. For example, if he used 620 pounds of calcium carbide with 1,000 gallons of 14 per cent acid, about half the acid was consumed by the carbide.

The danger in the use of caustic soda is that if a very large quantity is used the solubility product of sodium chloride is likely to be exceeded. This results in the precipitation of salt which might plug the pores of the formation, and might even fill the hole itself.

Mechanically heating the acid adds appreciably to the cost of necessary equipment, and to the time involved in doing the work. Since practically the same result may be achieved by higher concentrations of acid, the economies to be effected by the use of hot acid are indeed problematical.

Inhibitors

The use of inhibitors for protection against corrosion of casing and tubing furnishes one of the most interesting studies in connection with acid treatment. The Encyclopedia Britannica (Fourteenth Edition, Vol. 5, p. 22) defines inhibitors as follows:

"Whilst catalysts accelerate the course of a reaction, certain substances can hinder or even entirely stop a reaction. These are termed inhibitors."

Inhibited acid has been widely used in the steel industry in the process called "pickling." This step in the preparation of many products consists of removing mill scale and other foreign matter by the reaction of mineral acid, while still protecting the virgin metal from attack. Many citations on this class of inhibitors are found in Chemical Abstracts from 1910 to the present. As early as 1921 one of us examined an inhibitor placed in acid used for the removal of lime scale from engine jackets.

The manner of operation of inhibitors is perhaps imperfectly understood. A theory proposed by Chappell (Chappell, E. L. and others, Ind. Eng. Chem. 1928, p. 582) and supported by careful laboratory measurements has had wide acceptance throughout the world. Chappell's conclusions were that if the mechanism is likened to an electrochemical cell, the iron, under a specific solution pressure or potential, goes into solution in the form of ferrous ions while the hydrogen ions move to the cathode areas and are discharged as molecular hydrogen. Microscopic examination shows that the cathode areas are probably grain boundaries. Chappell's tests showed that organic base inhibitors increase the cathode potential (an increase of hydrogen overvoltage). They postulate that the inhibitor moves with the hydrogen to the cathode areas and there builds up resistance to the flow of current by being absorbed on the surface. Thus hydrogen evolution is retarded and consequently loss of metal is retarded.

Many of the inhibitors used are proprietaries identical to or evolved from those used in other industries. Relative efficiency tests of six organic inhibitors show that metal losses of .003 pound per square foot in 72 hours can be accomplished by the use of .1 to .3 per cent of inhibitor, based on acid volume used in the well. This is considered satisfactory. The tests were made on steel tank punchings and on tubing steel, using 14 per cent acid and inhibitor concentrations varying from .05 per cent to .50 per cent. Tubing steel showed greater losses than the tank steel, due at least in part to rougher surface of the tubing steel. In the majority of cases protection increased with concentration of inhibitor.

Radial Influence of Acid Treatments

It is obvious that, because of the extreme variation in the nature of the reservoirs themselves, little of actual fact as to the penetration of acid into the formation can be determined. The radial influence of the acid can vary from well to well in the same formation, with the same volume and strength of acid, because the resistance to the flow of acid will vary.

For example, in well No. 1 drainage channels may occur in the limestone and in the adjacent well No. 2, these drainage channels may be fewer in number and of smaller capacity. It seems obvious that the acid fluid would travel radially a greater distance from the open hole in well No. 1 than it would travel in well No. 2. Further, assume that these two wells are drilled upon the opposite limbs of a structure, one side of the structure being brecciated with the fissures filled with crystalline secondary calcite and the other side of the structure free of breccia. The acid treatment of the brecciated structure would create new drainage channels which would lower the resistance of the flow of oil to the open hole.

The authors have always been definitely of the opinion that the acid did not actually enlarge the drill hole in the same manner as does an explosive. In the first place, the quantities of acid commonly used are far short of the amount required to completely dissolve the volume of rock necessary to accomplish effective physical enlargement of the hole. Secondly, it cannot be shown that enlargement of the hole alone, resulting merely in increased open face of rock exposed, could account for anything like the increased production that has resulted from acid treatment.

To get an idea of the possible radial effect the following calculation has been made. The assumed conditions were those of a tight uniform sand, as follows:

Original porosity	12%
Calcite cement solubility	15%
Diameter of hole	6 inches
Penetration into sand pay	10 feet
1,000 gallons of 15% HCL	

Given:

1. Rock density (apparent) 2.35.
2. Hydrochloric acid 15%; sp. gr. 1.07, 1,000 gallons will react with 1,840 pounds calcium carbonate.
3. 1 cu. ft. 2.35 density rock weighs 147 lbs.

Then:

$1.47 \times 0.15 = 22$ lbs. calcite per cu. ft. of rock.
$1840/22 = 83.5$ cu. ft. reacting with acid.

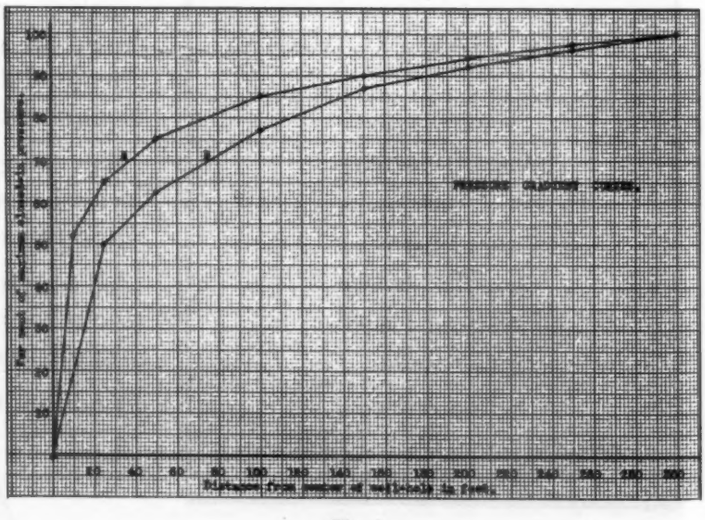

Fig. 3

The theoretical radius of the reaction zone is then found to be

$10\pi R^2 - 10\pi r^2 = 83.5$ cu. ft.
$R = 1.642$ ft.

Correcting for the radius (r) of the open hole, the radial extension of the reaction zone is $1.642 - 0.25 = 1.392$ ft. = 16.7 inches.

If 1,000 gallons of acid can tbe neutralized within 16.7 inches of the hole in 10 feet of formation which is only 15 per cent soluble in acid, what is to be expected of the same amount of acid in limestone of perhaps 90 per cent or greater solubility, and usually much greater depth into the pay?

A further calculation reveals the par-

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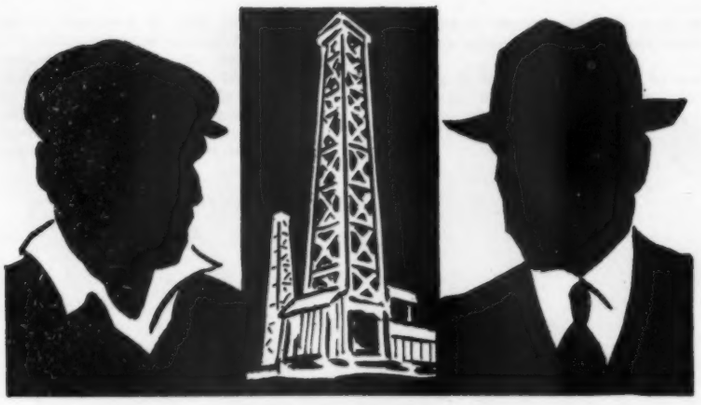

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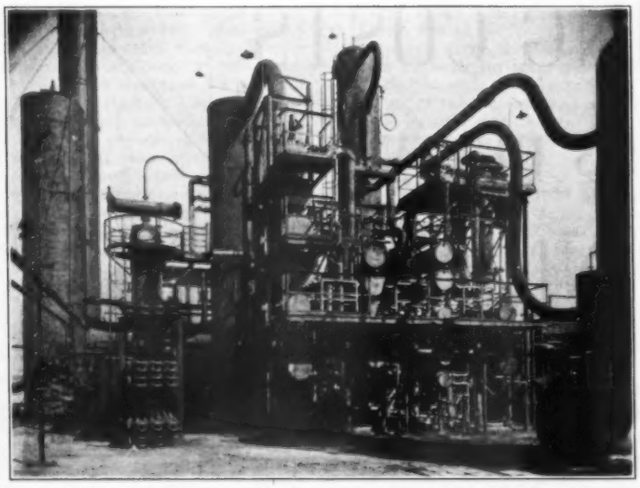

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adox that all the acid could not be absorbed in so small a volume of rock.

Before treatment, porosity 12% = 10 cu. ft.=	74.8 gal.
After treatment, pore space for 1,840 pounds calcite removed = $\frac{1,840 \text{ lbs.}}{175}$ = 10.5 cu. ft.=	78.5 gal.
Capacity of 10 feet of 6-inch hole	14.7 gal.
Total volume	168.0 gal.

In addition to the original fluid volume of 1,000 gallons, there are evolved in the reaction 39 gallons of water and an additional volume of undissolved CO_2 gas. We have then the paradox that 83.5 cubic feet of rock of only 15 per cent solubility will neutralize 1,000 gallons of acid, yet it contains even after the lime is all dissolved, only enough pore space to hold a small fraction of the fluid involved. The volume of pore space made by solution of higher concentrations of carbonates would be proportionately even less. It is apparent then that the acid must occupy a space much larger than that accounted for by volume of acid under these conditions.

Further light is thrown on the probable effective zone of action of the acid by Uren's (Uren, L. C., Trans. A.I.M.M.E. 1925, p. 1,276) work on increasing production by enlarging the diameter of the well. In a calculation based on the Poiseuille formula, Uren shows that over 50 per cent of the pressure loss between maximum reservoir pressure and that in the bottom of the well is occasioned by overcoming resistance to flow within the first 10 feet around the hole itself. He also shows that if the radius of the hole were increased to 10 feet, the productivity of the well is only slightly more than doubled.

The influence of acidation upon rate of flow is best expressed by the conventional pressure drop diagram. Enlarging and extending the drainage channels flattens the curve because the pressure gradient (pressure drop per unit length) is decreased in the zone adjacent to the open hole. This brings about an increase in the effective drainage area.

Figure 3(A) is Uren's curve calculated from the Poiseuille formula; Curve (B) has a flattened gradient due to reduction of resistance adjacent to the hole. The percentage of maximum pressure required to cause flow through any given distance from the hole is lower in (B) than under normal flow conditions, and conversely any given percentage of the pressure will cause flow from a greater distance. It will be noted from the curve that under normal conditions 50 per cent of the total pressure drop is required to force the oil the last 10 feet into the hole, while after enlargement of the flow channels the same 50 per cent is effective in causing flow from a distance of 25 feet. The average pressure drop gradient (% per foot) inside the 25-foot zone, according to the diagram is

$$A \frac{65\%}{25} = 2.6\% \text{ of max. press. per foot}$$

$$B \frac{50\%}{25} = 2\% \text{ of max. press. per foot}$$

In the overwhelming majority of cases where acid treatment has resulted in notable success the production has been far more than double the pre-treatment average. Since Uren has shown that production is only slightly more than doubled by increasing the diameter of the hole to 20 feet, it is apparent that reduction of flow resistance by acid is effective through a wider zone than would be influenced by a hole 20 feet in diameter with normal flow gradient operation outside of that distance.

Actual physical enlargement of the hole is probably accomplished where acid is used to remove so-called "gyp" scale from the walls of the hole. The scale is formed in a more or less continuous coating, samples of which reveal thickness in some cases exceeding two inches. It is built up by precipitation of carbonates from infiltrating waters. Laboratory tests of samples show that it is entirely on the face of the sand, and does not penetrate so much as one centimeter into the formation itself.

Removal of this scale with acid constitutes enlargement of the hole, but not beyond its original boundaries. Increased production results from removal of a physical barrier to the flow of oil, and not from reduction of resistance within the producing formation itself.

Surface Tension

The use of surface tension "breakers", with which experimentation has been carried on in connection with water flooding operations, is being given consideration as a means of increasing acidizing efficiency. The theory of their use is that greater penetrating power will be effected.

The complexity of the problem is readily apparent when one considers that it embraces the interfacial energies existing between oil and solid, water and solid, and oil and water. These conditions are not stable even in any given instance, since there is a continual change in the amount and character of the elements present as the acid reaction proceeds. The system becomes further involved with changes in the character of the rock, the fluid, the gas-oil ratio, etc.

The laboratory determination of surface tension is a very delicate and exacting process, requiring special apparatus and very special technique. Small amounts of contaminating material produce profound changes in surface tension of aqueous fluids. Unless the exact amount and character of any fluid in the hole were accurately known and corrected for, the efficiency of an acid solution of any predetermined surface tension would likely be entirely destroyed. Surface tension relations may be controlled in the laboratory, but they may not be in an oil well.

The ability of a fluid to enter capillaries increases with surface tension increase. If penetration is wanted, and it is, it would seem desirable to reach into the capillaries. Lowered surface tension would tend to defeat this purpose.

It has been argued that "Jamin effect" would be reduced by lowering the surface tension. Jamin effect is of no serious consequence in impeding the flow of a homogeneous fluid, such as acid, into the formation. It is very doubtful that any surface tension breakers introduced into the acid would have any effect on the interfacial energies of the fluids resulting from the reaction. The acid can have no effect upon Jamin effect as a deterrent to the flow of oil-gas mixtures, except physical enlargement of the pores which would reduce the Jamin action regardless of any surface tension qualities of the acid itself.

Reduced surface tension might be an aid in wetting the oil-wet walls of the pores with acid. Since it has been shown that the rate of reaction is faster on dry than on oil-wet surfaces, the net result of such wetting would be to cause neutralization of the acid close to the hole. This may or may not be the object desired, depending entirely upon local conditions.

After all, complete neutralization of the acid is the result sought. The comparative ease with which the quantities of acid ordinarily used may be pushed into all but the tightest formations leads to the conclusion either that the pores need only slight enlargement to cause effective increase in production or that the acid is singularly effective in opening them as it passes through. In many instances where the producing stratum is tight enough to resist the static head of several thousand feet of oil, it has "broken through" as soon as the acid reached it and permitted the introduction of a normal acid charge and an equal or greater amount of oil with little if any pressure and commonly with actual vacuum at the well-head.

It seems very doubtful that the introduction of substances calculated to reduce surface tension can add much to

(Continued on Page 64)

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give her the finest pie-apples in the world—
and boy, oh boy! what she can do!

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In the Pennsylvania Grade Crude district, and nowhere else, is produced Nature's richest, purest crude oil. From this special crude are refined all the motor oils sold under the insignia of the Pennsylvania Grade Crude Oil Association. They are *better oils from the ground up*.

Of course, Pennsylvania refiners have access to the latest, improved methods of refining, just as others have. And, in addition, they have an advantage that is *exclusive*—the crude itself. No matter what method or treatment the refiner uses, he gets a better finished motor oil if he makes it from Pennsylvania Grade Crude Oil.

Continuing its record-breaking campaign of national advertising for the *twelfth consecutive year*, the Pennsylvania Grade Crude Oil Association is making these vital selling points clear and unmistakable to the public. The advertising shows *why* Pennsylvania oils are *better oils from the ground up*. This campaign means more and better business for all who sell emblem-protected Pennsylvania motor oils!

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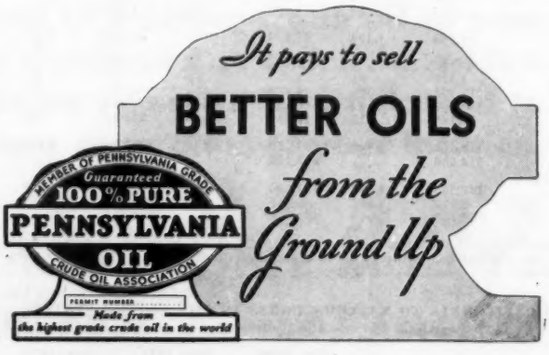
This is the famous Pennsylvania emblem—the insignia of this Association. It is not a brand, nor does it guarantee equal quality among the brands which display it. It guarantees that the member's motor oil sold under it meets the minimum standards set by this Association, and is made 100% from Pennsylvania Grade Crude Oil. It pays to sell under this emblem!



Bureau of Mines Statistics for Month of January, 1935

SUPPLY AND DEMAND OF ALL OILS

(Thousands of barrels of 42 gallons)

	Jan., 1935	Dec., 1934*	Jan., 1934
NEW SUPPLY:			
Domestic production:			
Crude petroleum	78,715	75,010	71,976
Daily average	2,539	2,420	2,322
Natural gasoline	3,286	3,236	3,024
Benzol†	147	123	130
Total production	82,148	78,369	75,130
Daily average	2,650	2,528	2,424
Imports‡			
Crude petroleum:			
Bonded warehouses	549	636	203
For domestic use	1,462	2,563	2,597
Refined products:			
Bonded warehouses	972	1,037	1,072
For domestic use	1,101	638	172
Total new supply, all oils	86,232	83,243	79,174
Daily average	2,782	2,685	2,554
Decrease in stocks, all oils	§1,231	5,864	4,478
DEMAND:			
Total demand	85,001	89,107	83,652
Daily average	2,742	2,874	2,698
Exports:			
Crude petroleum	2,369	2,432	2,288
Refined products	6,411	6,204	5,281
Domestic demand:			
Motor fuel	28,062	30,486	29,416
Kerosene	4,299	4,761	4,245
Gas oil and fuel oil	33,751	33,602	32,712
Lubricants	1,557	1,394	1,440
Wax	69	60	59
Coke	702	675	1,056
Asphalt	592	574	402
Road oil	156	137	165
Still gas (production)	3,808	3,790	3,457
Miscellaneous	203	175	41
Losses and crude used as fuel	3,022	4,817	3,060
Total domestic demand	76,221	80,471	76,083
Daily average	2,459	2,596	2,454
STOCKS:			
Crude petroleum	338,174	337,254	353,642
Natural gasoline	4,530	{ 3,740	3,906
		{ ¶4,216	
Refined products	222,675	{ 223,352	240,187
		{ ¶222,678	
Total, all oils	565,379	{ 564,346	597,735
		{ ¶564,148	
Days' supply	206	196	222

*Revised. †From Coal Division. ‡Imports of crude as reported to Bureau of Mines; imports of refined products from Bureau of Foreign and Domestic Commerce. §Increase. ¶New basis.

COMPARATIVE ANALYSES

(Thousands of barrels of 42 gallons)

	January, 1935		December, 1934*		January, 1934	
	Total	Daily av.	Total	Daily av.	Total	Daily av.
CRUDE PETROLEUM:						
Runs to stills	75,456	2,434	76,593	2,471	71,512	2,307
MOTOR FUEL:						
Production	36,236	1,169	36,448	1,176	34,013	1,097
Imports	.....	.....	.....	.....	1	.....
Exports†	2,125	69	1,689	54	1,940	63
Stocks, gasoline	53,266	.....	§47,531	.....	58,046	.....
Stocks, natural gasoline	4,530	.....	¶4,216	.....	3,906	.....
Domestic demand	28,062	905	30,486	983	29,416	949
KEROSENE:						
Production	5,011	162	4,777	154	4,507	145
Imports	.....	.....	.....	.....	.....	.....
Exports	722	23	817	26	591	19
Stocks	6,388	.....	6,398	.....	6,228	.....
Domestic demand	4,299	139	4,761	154	4,245	137
GAS OIL AND FUEL OIL:						
Production	27,193	877	28,283	912	26,393	851
Transfers‖	838	27	919	30	1,145	37
Imports:						
Bonded warehouses	972	31	711	23	1,071	35
For domestic use	1,072	35	621	20	125	4
Exports	2,547	82	2,966	96	1,738	56
Stocks	104,174	.....	110,397	.....	117,288	.....
Domestic demand	33,751	1,089	33,602	1,084	32,712	1,055
Railroad (Class I)¶	(‡)	(‡)	3,824	124	3,632	117
Pub. util. pow. plants**	896	29	893	29	909	29
Other	32,855	1,060	28,875	931	28,171	909
Bunker oil	2,394	77	2,355	76	2,592	84
LUBRICANTS:						
Production	2,175	70	2,346	76	2,198	71
Imports	.....	.....	.....	.....	.....	.....
Exports	849	27	490	16	768	25
Stocks	7,100	.....	7,331	.....	7,020	.....
Domestic demand	1,557	50	1,394	45	1,440	46
WAX (thous. of pounds):						
Production	36,960	1,192	37,520	1,210	46,480	1,499
Imports:						
Bonded warehouses	112	4	.....	.....	276	9
For domestic use	2,933	94	1,653	53	7,365	237
Exports	15,701	506	16,579	535	18,971	612
Stocks	141,252	.....	136,136	.....	78,934	.....
Domestic demand	19,188	619	16,650	538	25,049	808
COKE (short tons):						
Production	116,000	3,742	97,480	3,142	127,000	4,097
Stocks	374,800	.....	405,100	.....	637,000	.....
ASPHALT (short tons):						
Production	147,300	4,752	153,300	4,945	144,700	4,668
Imports (natural)	3,200	103	100	3	2,900	94
Stocks	366,400	.....	387,800	.....	303,500	.....

*Revised. †Includes benzol 1,207 bbls. in January, 1935. ‡New basis to compare with 1935. §Net transfers in California. ¶Interstate Commerce Commission. ‖Not available. **U. S. Geological Survey.

SHIPMENTS FROM CALIFORNIA TO EASTERN PORTS IN THE UNITED STATES*

(Thousands of barrels of 42 gallons)

	Jan., 1935	Dec., 1934	Jan., 1934
Gasoline	433	570	471
Kerosene	79	293	295
Gas oil and Diesel oil	313	215	510
Fuel oil	...	...	1,370
Lubricants	4	6	9
Asphalt	1	...	1
Miscellaneous	2	2	1
Total	832	1,086	2,567

*Compiled by E. T. Knudsen of the San Francisco office of the Bureau of Mines.

RECORD OF WELLS FOR IMPORTANT FIELDS AND DISTRICTS, JANUARY, 1935*

	Completions: Oil	Gas	Dry	Total initial production (barrels)	Average initial production (barrels)	Drilling Jan. 31
Texas:	588	27	184	604,700	1,030	936
Gulf Coast	44	5	20	26,800	610	121
West Texas	46	...	16	17,900	390	171
East Texas	320	...	8	528,000	1,650	142
Panhandle	43	4	4	13,700	320	121
California:	54	...	28	62,300	1,155	205
Huntington Beach	2	...	3	4,100	2,050	4
Kettleman Hills	2	...	2	21,900	10,950	26
Long Beach	15	...	3	5,300	355	27
Oklahoma:	68	12	47	34,000	500	459
Oklahoma County	3	1	1	800	270	20
Pottawatomie and Seminole County	12	...	7	9,000	750	71
Louisiana:	23	6	28	13,100	570	136
Gulf Coast	17	...	19	12,700	750	82
Rest of State	6	6	9	400	70	54
Other States	271	75	99	102,300	380	1,022
Total United States	1,004	120	386	816,400	815	2,758

* From The Oil and Gas Journal and California office of American Petroleum Institute.

STOCKS OF CRUDE PETROLEUM

(Thousands of barrels of 42 gallons)

	Jan. 31 1935	Dec. 31 1934	Jan. 31 1934
At refineries by location:			
East Coast: Domestic	10,743	10,006	9,419
Foreign	2,452	2,683	2,435
Appalachian	1,426	1,249	1,825
Indiana, Illinois, Kentucky, Michigan	4,308	4,048	4,391
Oklahoma, Kansas, and Missouri	5,954	5,996	6,161
Texas: Inland	1,592	1,708	1,892
Gulf Coast: Domestic	10,680	10,677	11,688
Foreign	602	*496	71
Louisiana Gulf Coast: Domestic	3,539	3,424	3,517
Foreign	622	612	541
Arkansas and Inland Louisiana	638	738	996
Rocky Mountain	13,385	13,382	12,522
California	8,414	9,080	9,041
Total	64,306	*64,099	64,499
At refineries by origin:			
Pennsylvania grade	1,138	1,104	1,732
Other Appalachian (including Kentucky)	653	624	598
Lima-N. E. Indiana-Michigan	214	292	557
Illinois-S. W. Indiana	124	104	116
N. Louisiana and Arkansas	2,051	1,982	2,923
West Texas and S. E. New Mexico	4,297	3,274	4,247
East Texas	6,279	6,238	8,892
Oklahoma, Kansas, N. Texas, etc.	16,379	16,610	15,905
Gulf Coast	7,527	7,654	4,950
Rocky Mountain	13,353	13,346	12,501
California	8,414	9,080	9,041
Foreign	3,677	*3,791	3,047
Total	64,306	*64,099	64,499
Pipe Line and Tank Farm:			
Pennsylvania Grade	3,598	3,760	3,875
Other Appalachian (including Kentucky)	574	554	832
Lima-N. E. Indiana-Michigan	927	992	1,155
Illinois-S. W. Indiana	11,278	11,351	11,243
N. Louisiana and Arkansas	7,751	7,999	8,957
West Texas and S. E. New Mexico	26,368	26,564	27,581
East Texas	25,305	24,928	36,472
Oklahoma, Kansas, N. Texas, etc.	134,559	135,907	139,528
Gulf Coast	12,136	11,034	11,486
Rocky Mountain	14,838	14,702	15,072
California	27,667	26,834	24,823
Total	265,001	264,625	281,024
Lease (producers') stocks	8,867	8,530	8,119
Total refinable crude in the U. S.	338,174	*337,254	353,642

* Revised.

STOCKS OF CRUDE PETROLEUM BY STATES AND BY LOCATION

(Thousands of barrels of 42 gallons)

	January 31, 1935				December 31, 1934			
	Refinery	Tank farm and pipe line	Lease	Total	Refinery	Tank farm and pipe line	Lease	Total
Arkansas	481	2,878	315	3,674	501	3,108	315	3,924
California	8,414	27,667	1,742	37,823	9,080	26,834	1,615	37,529
Colorado	310	120	22	452	307	112	20	439
Georgia*	752	.....	.....	752	713	.....	.....	713
Illinois	1,340	10,631	120	12,091	1,242	10,357	120	11,719
Indiana	1,281	1,880	8	3,169	1,237	1,877	8	3,122
Kansas	2,309	10,763	400	13,472	2,104	10,861	385	13,350
Kentucky†	524	457	40	1,021	551	444	40	1,035
Louisiana‡	4,369	6,587	480	11,436	4,273	6,438	470	11,181
Maryland	1,171	.....	.....	1,171	1,144	.....	.....	1,144
Massachusetts§	1,033	.....	.....	1,033	1,078	.....	.....	1,078
Michigan	130	502	82	714	147	583	80	810
Missouri¶	174	3,132	.....	3,306	176	3,175	.....	3,351
Montana	265	822	80	1,167	294	706	75	1,075
New Jersey	5,549	443	.....	5,992	5,189	487	.....	5,676
New Mexico	7	452	230	689	6	310	220	536
New York	1,215	125	18	1,358	1,021	168	17	1,206
Ohio	1,117	7,032	80	8,229	993	7,006	80	8,079
Oklahoma	3,471	75,924	1,800	81,195	3,716	77,298	1,600	82,614
Pennsylvania	4,646	1,732	105	6,483	4,608	1,825	100	6,533
Texas	12,874	98,158	2,820	113,852	‖13,881	97,360	2,860	‖113,001
Utah	266	.....	.....	266	282	.....	.....	282
West Virginia	71	1,833	145	2,049	63	1,921	140	2,124
Wyoming**	12,537	13,863	380	26,780	12,492	13,855	385	26,732
Total United States	64,306	265,001	8,867	338,174	‖64,099	264,625	8,530	‖337,254

*Includes South Carolina and Virginia. †Includes Tennessee. ‡Includes Alabama. §Includes Rhode Island. ¶Includes Iowa. ‖Revised. **Includes Nebraska and South Dakota.

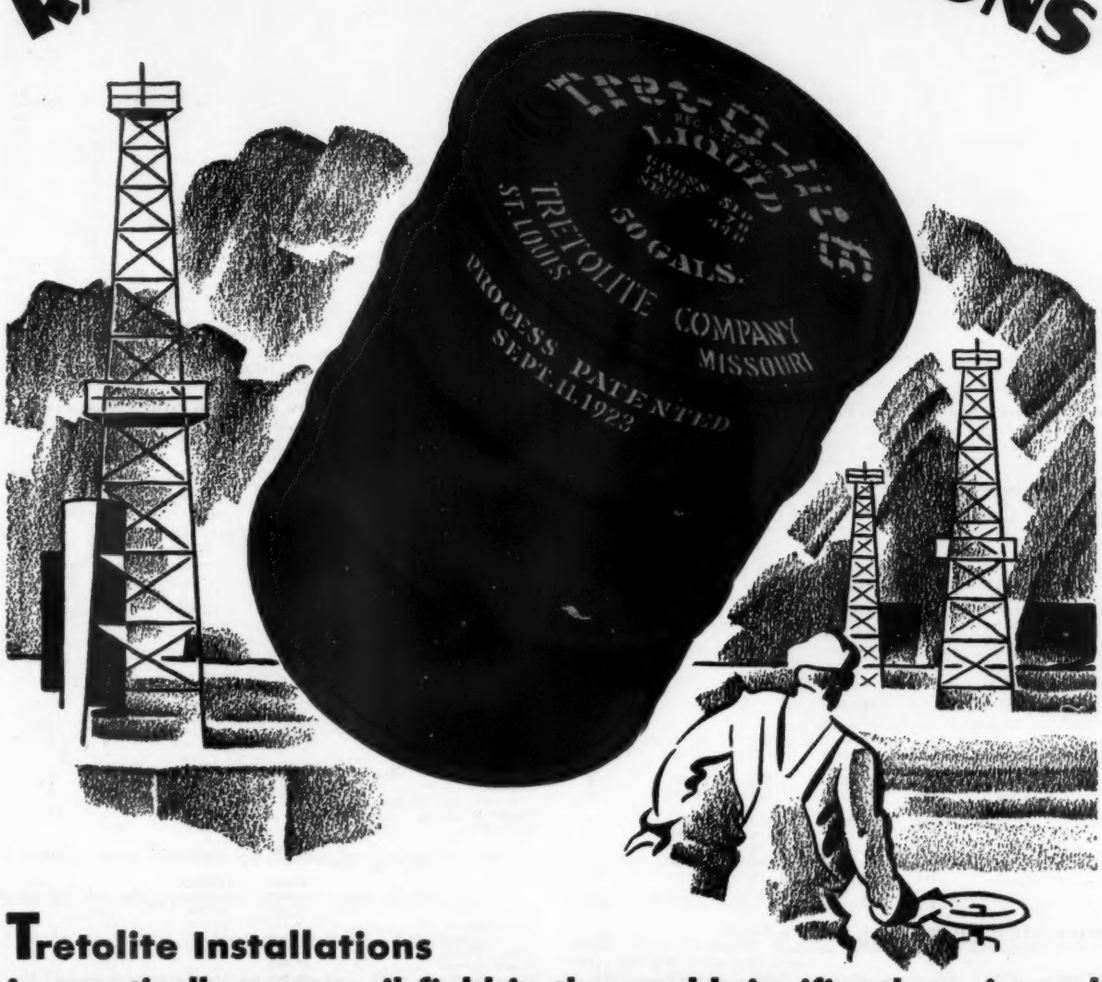
NUMBER OF WELLS COMPLETED IN THE UNITED STATES*

	Jan., 1935	Dec., 1934	Jan., 1934
Oil	1,004	1,050	910
Gas	120	122	110
Dry	386	377	332
Total	1,510	1,549	1,352

*From The Oil and Gas Journal and California office of American Petroleum Institute.

(Continued on Next Page)

..... TO MEET A WIDE RANGE OF CONDITIONS



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PRODUCTION OF CRUDE PETROLEUM BY STATES AND PRINCIPAL FIELDS

(Thousands of barrels of 42 gallons)

	January, 1935		December, 1934		January, 1934	
	Total	Daily av.	Total	Daily av.	Total	Daily av.
Arkansas	882	28.5	937	30.2	956	30.8
California:						
Huntington Beach	1,212	39.1	1,262	40.7	1,195	38.6
Kettleman Hills	2,104	67.9	1,844	59.5	1,597	51.5
Long Beach	1,930	62.3	1,902	61.4	1,806	58.2
Santa Fe Springs	1,200	38.7	1,198	38.6	1,283	41.4
Rest of State	9,065	292.4	8,637	278.6	8,282	267.2
Total California	15,511	500.4	14,843	478.8	14,163	456.9
Colorado	116	3.7	96	3.1	87	2.8
Illinois	332	10.7	321	10.4	393	12.7
Indiana	59	1.9	60	1.9	72	2.3
Kansas	4,246	137.0	3,933	126.9	3,407	109.9
Kentucky	445	14.4	439	14.2	362	11.7
Louisiana:						
Gulf Coast	2,727	88.0	2,490	80.3	1,351	43.6
Rest of State	708	22.8	731	23.6	852	27.5
Total Louisiana	3,435	110.8	3,221	103.9	2,203	71.1
Michigan	1,028	33.1	875	28.2	822	26.5
Montana	374	12.1	395	12.7	222	7.2
New Mexico	1,663	53.6	1,478	47.7	1,319	42.5
New York	357	11.5	336	10.9	306	9.9
Ohio:						
Central and Eastern	264	8.5	249	8.0	269	8.7
Northwestern	76	2.5	69	2.2	89	2.9
Total Ohio	340	11.0	318	10.2	358	11 6
Oklahoma:						
Oklahoma City	4,949	159.6	5,041	162.6	5,589	180.3
Seminole	3,708	119.6	3,121	100.7	3,311	106.8
Rest of State	6,559	211.6	6,541	211.0	6,318	203.8
Total Oklahoma	15,216	490.8	14,703	474.3	15,218	490.9
Pennsylvania	1,304	42.1	1,207	38.9	1,152	37.2
Tennessee	.....	.....	1	.....	1	.....
Texas:						
Gulf Coast	5,263	169.8	5,045	162.7	4,913	158.5
West Texas	4,561	147.1	4,352	140.4	3,994	128.8
East Texas	14,257	459.9	13,338	430.3	13,989	451.3
Panhandle	1,827	58.9	1,782	57.5	1,326	42 8
Rest of State	6,063	195.6	5,925	191.1	5,464	176.2
Total Texas	31,971	1,031.3	30,442	982.0	29,686	957.6
West Virginia	333	10.7	334	10 8	340	10.0
Wyoming:						
Salt Creek	539	17.5	549	17.7	524	16.9
Rest of State	564	18.2	522	16.9	385	12 4
Total Wyoming	1,103	35.6	1,071	34.6	909	29.3
Total United States	78,715	2,539.2	75,010	2,419.7	71,976	2,321.8

PRODUCTION OF CRUDE PETROLEUM BY DISTRICTS

(Thousands of barrels of 42 gallons)

	January, 1935		December, 1934		January, 1934	
	Total	Daily av.	Total	Daily av.	Total	Daily av.
Appalachian:						
Pennsylvania Grade	2,120	68.4	1,987	64.1	1,933	62.4
Other (inc. Kentucky)	583	18.8	579	18.7	497	16.0
Lima-N. E. Ind.-Mich.	1,104	35.6	944	30.4	911	29.4
Ill.-S. W. Ind.	391	12.6	381	12.3	465	15 0
Mid-Continent:						
N. La. and Ark.	1,590	51.3	1,668	53.8	1,808	58.3
W. Texas-S. E. New Mex.	6,188	199.6	5,796	187.0	5,280	170.3
East Texas	14,257	459.9	13,338	430.3	13,989	451.3
Other (Okla., Kans., N. Tex., etc.)	27,352	882.3	26,342	849.8	25,415	819.8
Gulf Coast	7,990	257.8	7,535	243.0	6,264	202.1
Rocky Mountain	1,629	52.5	1,596	51.5	1,251	40.3
California	15,511	500.4	14,843	478.8	14,163	456.9
Total	78,715	2,539.2	75,010	2,419.7	71,976	2,321.8

PRODUCTION OF MOTOR FUEL

(Thousands of barrels of 42 gallons)

	January, 1935		December, 1934*		January, 1934	
	Total	Daily av.	Total	Daily av.	Total	Daily av.
Refinery gasoline:						
Straightrun	17,221	555	16,978	548	16,582	535
Cracked	15,781	509	16,260	525	14,657	473
Natural gasoline:						
Production	3,286	106	3,236	104	3,024	98
Deduct losses	199	6	149	5	381	13
Benzol	147	5	123	4	130	4
Total motor fuel	36,236	1,169	36,448	1,176	34,013	1,097

*Revised.

SHIPMENTS OF MOTOR FUEL BY PIPE LINES

(Thousands of barrels of 42 gallons)

	Jan., 1935	Dec., 1934	Jan., 1934
Motor fuel turned into lines	3,992	3,583	3,274
Motor fuel delivered from lines	3,654	3,535	3,357
Shortage	52	*5	6
Stocks in lines and working tanks end of month	2,329	1,343 †2,043	1,226

*Overage. †New basis to compare with 1935.

GASOLINE PRODUCTION BY THE VARIOUS METHODS, JANUARY, 1935

(Thousands of barrels of 42 gallons)

	Straightrun			Cracked			Nat. gasoline		Gasoline	
		Per cent			Per cent			Per cent		Per cent
	Total	(*)	(†)	Total	(*)	(†)	Total	(†)	Total	(*)
East Coast	2,534	18.7	43.4	3,154	23.3	54.1	148	2.5	5,836	42.0
Appalachian	800	27.7	53.0	675	23.4	44.7	35	2.3	1,510	51.1
Ind., Ill., etc.	2,326	23.9	40.9	3,144	32.4	55.3	219	3.8	5,689	56.3
Okla., Kans., Mo.	2,282	27.2	46.9	2,051	24.4	42.2	530	10.9	4,863	51.6
Texas Inland	1,411	31.0	54.9	778	17.1	30.3	380	14.8	2,569	48.1
Texas Gulf	3,279	20.7	47.6	3,518	21.6	49.5	203	2.9	7,100	42.3
Louisiana Gulf	804	22.2	59.7	527	14.5	39.2	15	1.1	1,346	36.7
Ark. and La. Inland	340	24.5	53.0	270	19.5	42.0	32	5.0	642	44.0
Rocky Mountain	360	27.9	49.4	314	24.3	43.1	55	7.5	729	52.2
California	2,985	21.7	59.1	1,350	9.9	26.8	711	14.1	5,046	31.6
Total	17,221	22.8	48.7	15,781	20.9	44.7	2,328	6.6	35,330	43.7

*Per cent of crude run. †Per cent of total gasoline output.

RECEIPTS OF FOREIGN PETROLEUM

(Thousands of barrels of 42 gallons)

	Jan., 1935	Dec., 1934	Jan., 1934
Atlantic Seaboard:			
Venezuela	1,582	2,003	1,443
Colombia	.....	.....	666
Mexico	138	333	543
Ecuador	.....	.....	79
Gulf Coast:			
Colombia	222	548	.....
Mexico	.....	134	69
Venezuela	69	181	.....
Total	2,011	3,199	2,800

RUNS TO STILLS AND OUTPUT OF REFINERIES, JANUARY, 1935

(Thousands of barrels of 42 gallons)

	Crude runs			Unfinished rerun (net)		
INPUT—	Domestic	Foreign	Total	Crude gasoline	Other	Natural gasoline
East Coast	11,612	1,935	13,547	15	176	148
Appalachian	2,886	.....	2,886	32	296	35
Ind., Ill., Ky., etc.	9,714	.....	9,714	89	143	219
Okla., Kans., Mo.	8,403	.....	8,403	—291	138	530
Texas Inland	4,552	.....	4,552	—37	—51	380
Texas Gulf	16,148	163	16,311	10	—365	203
Louisiana Gulf	3,614	14	3,628	20	—576	15
Ark. and La. Inland	1,385	.....	1,385	—3	—28	32
Rocky Mountain	1,292	.....	1,292	—14	8	55
California	13,738	.....	13,738	—137	—120	*715
Total	73,344	2,112	75,456	—325	—379	2,332

OUTPUT—	Gasoline	Kerosene	Gas oil and distillate fuels	Residual fuel oils	Lubricants	Wax (thou. of pounds)
East Coast	5,836	974	1,182	3,994	660	16,240
Appalachian	1,510	269	218	418	467	6,440
Ind., Ill., Ky., etc.	5,689	281	1,148	1,431	213	3,640
Okla., Kans., Mo.	4,863	521	675	1,670	253	3,920
Texas Inland	2,569	233	294	1,389	29	280
Texas Gulf	7,100	1,635	1,720	4,039	393	3,360
Louisiana Gulf	1,346	517	366	614	20	1,400
Ark. and La. Inland	642	75	88	436	10	.....
Rocky Mountain	729	41	66	393	19	1,680
California	5,046	465	1,939	6,051	111	.....
Total	35,330	5,011	7,696	20,335	2,175	36,960

OUTPUT—	Coke (tons)	Asphalt (tons)	Road oil	Still gas	Miscellaneous	Shortage
East Coast	12,000	44,600	.....	746	85	46
Appalachian	2,200	4,200	—1	183	22	106
Ind., Ill., Ky., etc.	49,000	45,600	30	770	8	75
Okla., Kans., Mo.	19,000	1,800	12	409	14	244
Texas Inland	2,200	.....	8	110	7	193
Texas Gulf	15,600	12,900	3	977	19	112
Louisiana Gulf	6,400	2,200	.....	161	1	13
Ark. and La. Inland	200	8,900	18	33	8	26
Rocky Mountain	9,000	.....	32	78	.....	32
California	.....	27,100	73	341	†22	—1
Total	116,000	147,300	175	3,808	186	846

*Includes 52,000 bbls. run through pipe lines. †Includes 4,000 bbls. liquefied petroleum gas made from natural gasoline.

CRACKED OPERATIONS

Fresh cracking stock charged to stills: crude, 5,434,000 bbls.; other oils, 35,497,000 bbls. Gasoline produced by cracking, 15,781,000 bbls. Fuel oil produced by cracking, 15,470,000 bbls.

STOCKS HELD BY REFINING COMPANIES, JANUARY 31, 1935

(Thousands of barrels of 42 gallons)

	Finished gasoline					Gas oil and distillate fuel oils
	At refineries	Bulk and pipe lines	Unfinished gasoline	Total gasoline	Kerosene	
East Coast	5,530	9,673	856	16,059	1,484	3,334
Appalachian	1,103	1,078	293	2,474	195	311
Ind., Ill., Ky., etc.	4,553	3,623	700	8,876	651	2,262
Okla., Kans., Mo.	3,727	2,027	650	6,404	578	992
Texas Inland	1,650	98	206	1,954	108	189
Texas Gulf	6,206	732	1,387	8,325	1,574	3,199
Louisiana Gulf	866	466	195	1,527	401	1,662
Ark. and La. Inland	194	64	52	310	18	105
Rocky Mountain	846	.....	108	954	130	178
California	8,549	2,281	892	11,722	1,249	5,239
Total	33,224	20,042	5,339	58,605	6,388	18,021

	Wax (thousands of pounds)			
	Residual fuel oil	Lubricants	Crude scale	Refined	Total
East Coast	6,913	2,218	23,681	35,331	59,012
Appalachian	459	966	17,422	2,536	19,958
Ind., Ill., Ky., etc.	2,810	563	14,933	1,784	16,717
Okla., Kans., Mo.	2,204	594	6,489	1,202	7,691
Texas Inland	1,729	107	.....	89	89
Texas Gulf	7,037	1,557	2,684	20,828	23,512
Louisiana Gulf	2,914	102	1,131	1,355	2,486
Ark. and La. Inland	764	17	.....	.....	.....
Rocky Mountain	444	91	10,499	1,288	11,787
California	60,879	885	.....	.....	.....
Total	86,153	7,100	76,839	64,413	141,252

	Coke (tons)	Asphalt (tons)	Road oil	Miscellaneous	Other unfinished	Natural gasoline
East Coast	17,700	98,200	31	48	7,570	119
Appalachian	9,300	11,900	12	36	2,066	14
Ind., Ill., Ky., etc.	23,300	94,400	76	25	5,596	38
Okla., Kans., Mo.	44,300	8,200	130	20	5,453	96
Texas Inland	27,000	.....	52	7	1,164	11
Texas Gulf	79,100	13,500	31	18	10,666	167
Louisiana Gulf	6,100	25,000	11	.....	1,533	.....
Ark. and La. Inland	100	48,100	16	1	347	3
Rocky Mountain	77,900	5,300	165	6	1,823	27
California	90,000	61,800	163	50	4,899	2,594
Total	374,800	366,400	687	211	41,117	3,069

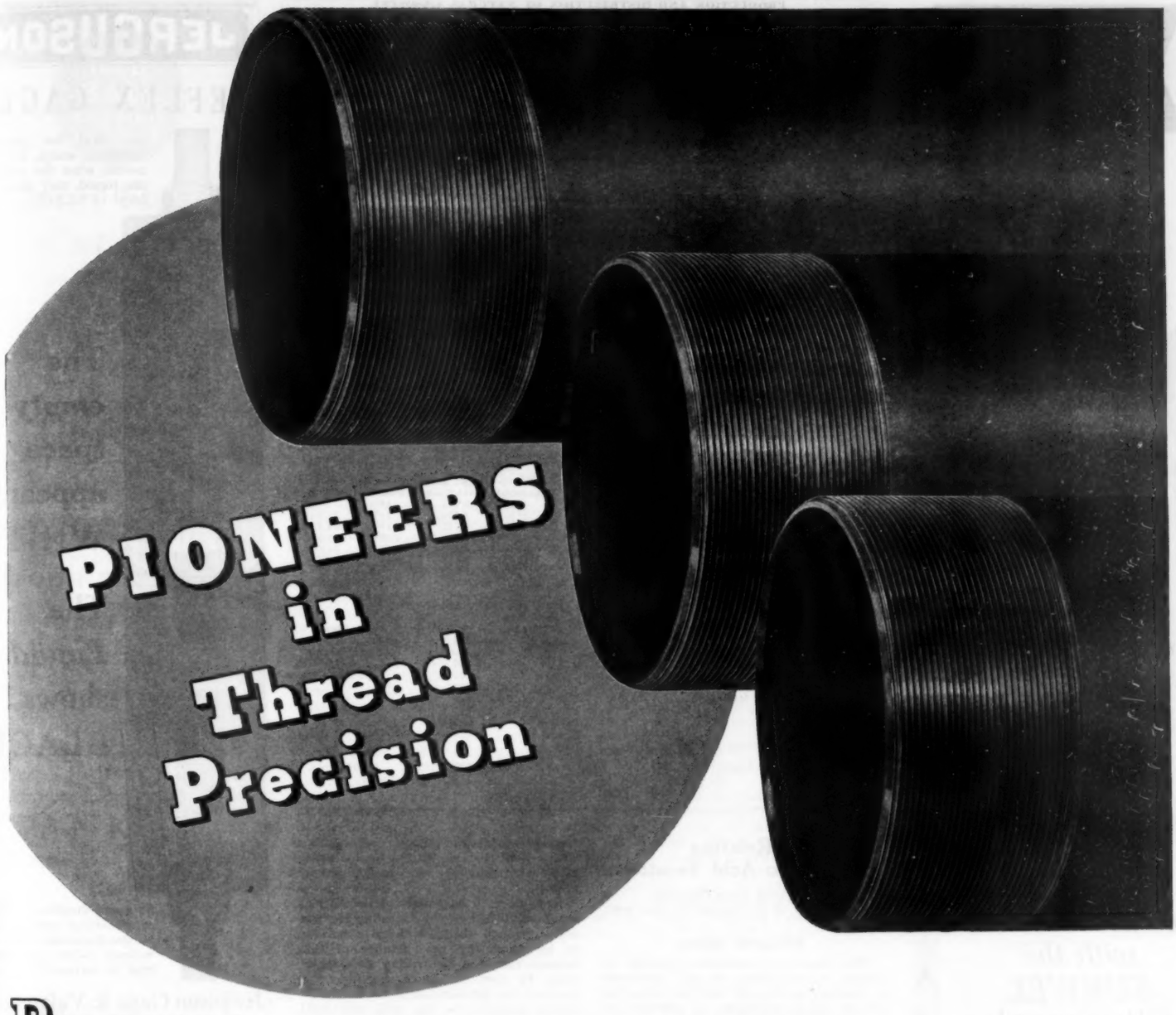
Grand total stocks refined products 222,675,000 bbls.

INDICATED DOMESTIC DEMAND FOR CRUDE PETROLEUM

(Thousands of barrels of 42 gallons)

Domestic petroleum by fields of origin:	January, 1935		December, 1934		January, 1934	
	Total	Daily av.	Total	Daily av.	Total	Daily av.
Appalachian:						
Pennsylvania Grade	2,227	72.2	2,140	69.0	1,916	61.8
Other (inc. Kentucky)	534	17.2	551	17.8	496	16.0
Lima-N. E. Ind.-Mich.	1,145	36.9	993	32.0	964	31.1
Ill.-S. W. Ind.	444	14.3	387	12.5	290	9.4
Mid-Continent:						
N. La. and Ark.	1,769	57.1	1,724	55.6	1,796	57 9
W. Texas-S. E. N. Mex	5,306	171.2	5,373	173.3	6,226	200.9
East Texas	13,764	444.0	14,615	471.4	14,816	477.9
Other (Okla., Kans., N. Tex., etc.)	28,796	928.9	30,036	968.9	24,702	796.9
Gulf Coast	6,990	225.5	7,610	245.7	5,847	188.6
Rocky Mountain	1,479	47.7	1,624	52.4	1,181	38.0
California	14,663	473.0	13,983	451.0	13,803	445 3
Total demand	77,127	2,488.0	79,036	2,549.6	72,037	2,323.8
Exports	2,369	76.4	2,432	78.5	2,288	73.8
Domestic demand	74,758	2,411.6	76,604	2,471.1	69,749	2,250.0
Foreign petroleum	2,125	68.5	2,701	87.1	2,808	90.6
Total domestic demand	76,883	2,480.1	79,305	2,558.2	72,557	2,340.6

(Continued on Next Page)



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PRODUCTION AND DISTRIBUTION OF NATURAL GASOLINE

(Thousands of barrels of 42 gallons)

	January, 1935		December, 1934		January, 1934	
	Total	Daily av.	Total	Daily av.	Total	Daily av.
Production	3,286	106	3,236	104	3,024	98
Decrease in all stocks	.....	.....	.....	.....	.....	.....
Total	3,286	106	3,236	104	3,024	98
Blended at refineries	2,276	74	2,706	87	2,083	67
Run through pipe lines in California	52	2	53	2	139	4
Jobbers, exports, etc.	445	14	302	9	174	6
Increase in all stocks	314	10	26	1	247	8
Losses	199	6	149	5	381	13
Total	3,286	106	3,236	104	3,024	98

REVISED FIGURES FOR 1934 AND JANUARY 1, 1935

Although it has been the intention to withhold revisions and corrections in the statistics for 1934 until the final figures were issued in the middle of 1935, some of the revisions received since the publication of the preliminary totals in the statement for December, 1934, are of such importance that it has been decided to show them at once to replace the data shown in the Monthly Petroleum Statements for 1934. Furthermore, it was necessary to reclassify motor fuel stocks on a new basis as of January 1, 1935, to compare with the data for January 31, 1935.

REVISED FIGURES FOR 1934

(Thousands of barrels)

	Foreign crude					
		Stocks		Runs to stills		Total refined stocks
	Imports	East Coast	Texas Gulf	East Coast	Texas Gulf	
June	3,787	3,069	(*)	(*)	(*)	(*)
July	3,001	2,781	(*)	2,859	(*)	233,792
August	2,746	2,434	(*)	3,026	(*)	234,317
September	2,928	2,537	494	2,489	(*)	233,785
October	2,884	2,303	469	2,571	427	229,717
November	2,915	2,447	448	2,489	270	225,093
December	3,199	(*)	496	2,123	568	223,352

	Gasoline production		Ref. gasoline stocks		Motor fuel demand (U. S.)
	East Coast	Texas Gulf	East Coast	Texas Gulf	
July	6,166	(*)	5,757	(*)	(*)
August	6,019	(*)	5,208	(*)	38,941
September	5,467	(*)	4,742	(*)	34,934
October	6,050	6,737	4,224	4,208	37,535
November	5,849	7,034	3,860	4,554	34,961
December	6,264	7,276	4,358	5,517	30,486

*No change.

STOCKS FOR JANUARY 1, 1935, ON NEW BASIS

(Thousands of barrels)

	Bulk and pipe line gasoline	Natural gasoline at plants and terminals
East Coast	8,927	(*)
Appalachian	1,226	(*)
Indiana, Illinois, etc.	3,953	(*)
Oklahoma, Kansas, Missouri	1,715	(*)
Texas Inland	(*)	658
Texas Gulf	637	49
Louisiana Gulf	(*)	178
Arkansas and Louisiana Inland	(*)	23
Total United States	19,220	1,336

*No change.

Questions Relating to Acid Treatment

(Continued from Page 58)

the efficiency of the process as now practiced.

Permanent Effects

The important economic question in regard to the effect of acid treatment is whether merely the rate of extraction of the oil is increased, or whether an appreciable gain is made in the amount of oil ultimately recoverable from the reservoir. There are many factors which influence the ultimate recovery from an oil pool, as many of them having to do with the man-made scheme of operation as with the conditions supplied by nature. It has been the authors' opinion that where a notable success has been achieved by acid treatment of any given well or group of wells it must almost necessarily follow that increases in recoverable reserves have been made.

It is an axiom of production practice that close-spacing of wells is conducive to high extraction per acre, and that wide-spacing is conducive to high recovery per well. Close-spacing results in high efficiency of recovery per acre because the distance the oil must flow to the well is a minimum. That is only another way of saying that close spacing imposes a minimum of resistance to the flow of oil in response to the pressure differential existing between the shut-in pressure of the reservoir and the operating bottom-hole pressure at the well. Uren emphasizes the fact that "the area drained by a well is not constant, but decreases as the field pressure declines." The drainage area contemplated in initial spacing programs may be maintained if pressure may be stabilized, or "if by any device the resistance to movement of the oil may be reduced." Pressure may be stabilized either by careful control of production in those fields which are fortunate enough to have effective natural water drive, such as East Texas and Keokuk Falls; or by artificially repressuring with water, gas or air.

Resistance to movement of the oil may be accomplished only by opening the passages through the rock with a solvent, or by decreasing the distance of flow through the sand by drilling close-spaced wells. In view of Uren's showing that most of the pressure drop occurs immediately adjacent to the well, any drilling program designed to even materially reduce it by mere multiplicity of holes would be economic suicide. The alternative for economic safety has been prodigality with an almost invaluable natural resource.

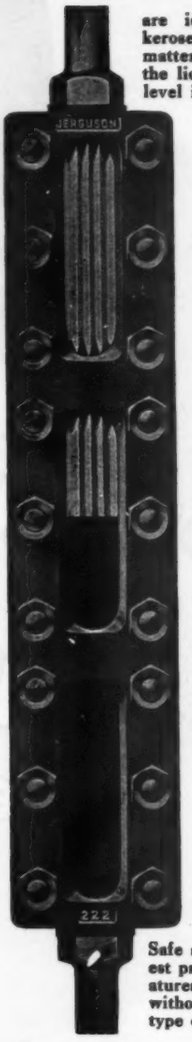
In those reservoirs containing a significant amount of acid-soluble substance the resistance to flow is reduced quickly, cheaply and effectively by the introduction of acid. Economically we may use it either to recover the same amount as formerly by spacing our wells even wider, or to increase the ultimate by the same spacing. In the newer fields where advanced methods of production would lead to high ultimate recovery anyhow, the use of acid may only shorten the time necessary for the extraction of the oil. In the old fields where redrilling or repressuring is economically impractical, or even in connection with repressuring, acid treatment furnishes a means of reviving and restoring production at a cost which is feasible for low-yield properties.

M. E. HILDEBRAND DIES

M. E. Hildebrand, 75, formerly of Bartlesville, Tulsa and Bristow, Okla., died last week at the home of a son, Claude C. Hildebrand, in Amarillo, Tex. C. C. Hildebrand, a son, was at one time a scout in the Tulsa-Bristow area, and later became a scout in the Panhandle district, and is now manager of the Panhandle land department for the Phillips Petroleum Co.

JERGUSON

REFLEX GAGES



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Among Gulf Coast Drilling Contractors

Jeff Hooper, on a well being drilled for himself and Rupert Cox in the Coleto Creek Field, Victoria County, made a drill stem test at 2,845 feet and recovered 11 fourbles of sand and oil. Another 5-foot core was taken in the sand tested, all of which proved to be saturated. Casing has been set and the well is expected to be completed in the near future.

John Mabee, Oklahoma contractor, has a contract and is moving in rig to drill a well for Johnston and Johnston at South Houston, Harris County. This test is projected to go to 6,000 feet, and is in the town.

Anderson & Kerr Drilling Co. have a location to drill No. 1 R. Lueders, about 2½ miles southwest of Plantersville, Grimes County.

Edwards Drilling Co. is drilling below 7,700 feet on a deep test at Charenton Dome, St. Mary's Parish, Louisiana. This hole is projected to go to 8,500 feet.

George Echols, in addition to five other rigs running as previously reported, has contract to drill a 6,000-foot test for the Felmont Corp., 7½ miles southwest of Beeville.

Jordan Drilling Co. drilled plugs recently on No. 3 Trinity State Bank for the Boone Brothers in the Kittrell Field, and after setting liner and screen are now reworking the well to shut off excessive gas. Virtually the same sand cored in the discovery well, also drilled by Boone Brothers, was cored in No. 3.

Cron & Gracey, drilling for Shell Petroleum Corp. at Whitecastle, La., topped the salt at 4,850 feet and were instructed to keep going. A straight hole test shortly after revealed the hole to be about 18 degrees off vertical, which is a typical difficulty encountered in drilling through salt. After straightening the hole, the contractors are now drilling in broken salt, limestone and shale at 5,146 feet, indicating that they have broken through the dome overhang. The same contractors are rigging up to drill No. 2 Dawson for the Texas Co. at Manvel; have four rigs running for the Shell Petroleum Corp. in the Iowa Field, Louisiana; have one rig running for the Repollo Oil Co. at Hobbs, N. Mex.; are rigging up to drill a well for Sinclair Prairie Oil Co. in East Texas; have a rig running at Barbers Hill for the same company; and have one rig running at Roanoke for the Shell Petroleum Corp.

Charley Rowan, of Rowan Drilling Co., is giving a fair imitation of a hen with a mixed brood of migrating chicks these days, having one rig running for the Amerada Petroleum Corp at Tomball; one 5 miles south of Sinton, San Patricio County, for the Stanolind Oil & Gas Co.; one at Cayuga for Tide Water-Texas Seaboard Oil Companies; one 10 miles north of Pennwell, Ector County, for Neville Penrose and others; and one for the Tide Water Oil Co. in East Texas. As a consequence, Charley's office hours in his company's Houston office are slightly irregular.

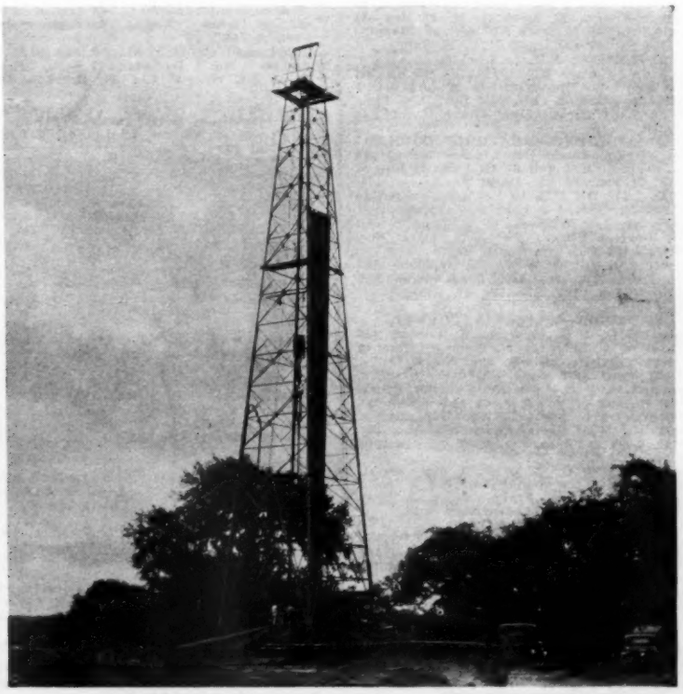
W. V. Bowles has completed No. 3 Norvell for Bowles & Borsodi in the Manvel Field, adding a second good producer to his string. Preparations are being made to drill No. 2 Norvell at once, Bowles also has a rig running on No. 6 Ewing for the Texas Co. at Manvell.

Harvey & Rush are moving in to drill a well for the Kirby Petroleum Co. in the Big Thicket near the town of Votaw, on the line between Hardin and Polk Counties.

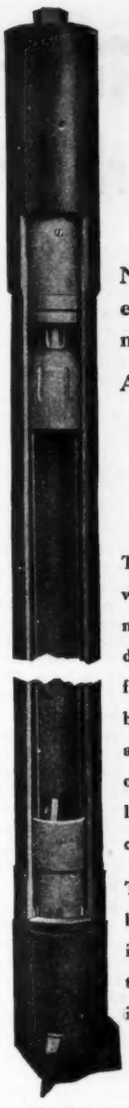
W. Claude Smith is moving in to drill No. 3 Ziegler for the Texas Co. in the Tomball Field.

Rutherford Drilling Co. has a location to drill for the Stanolind Oil & Gas Co. in the Greta Field.

John Deering, who has just completed a well for the Batson Oil Co. and John Deering, in the Batson Field, Hardin County, which flowed 5,500 bbls. in 24 hours, is staking a location for No. 1 Bullock in the same field. No. 2 Crews, in the same field, is drilling. Deering also is drilling below 5,500 feet on a wildcat well in Wharton County, which is for Paul Kaiser and himself.



Drilling rig of Heyser & Heard in the West Tuleta field, Pettus district, Bee County. These contractors have several excellent producers in the West Tuleta field, and are active in Southwest Texas



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May Kill Humble Test in Chambers County for Workover; Good Well in Dickinson Field

By F. L. SINGLETON
Gulf Coast Bureau, The Oil and Gas Journal

HOUSTON, Tex., Mar. 18.—Humble Oil & Refining Co.'s No. 1 Middleton, a wildcat test east of Anahuac, northern Chambers County, which has held the attention of Gulf Coast operators for the past three weeks, was recompleted the second time at its new total depth of 7,088 feet, and late in the week it was cleaning itself through a one-quarter inch choke, flowing 12 bbls. per hour, of which 18 per cent was B.s. and wash water, with tubing pressure 1,550 pounds and shut-in casing pressure 2,300 pounds.

The test was completed two weeks ago at 7,052 feet and flowed 6 bbls. per hour, but due to the high gas-oil ratio which registered 16,400 feet of gas per barrel of oil, the operators decided to deepen. It was cored at intervals from 7,052-88 feet, the total depth, which was practically all sand showing oil and gas. The base of the sand was found at 7,084 feet, with the last four feet being shale.

Due to the large amount of saturated sand encountered and the favorable showing made on a drill stem test a few weeks ago, it was believed that the test would make a much better showing, and unless it increases in production after it has thoroughly cleaned itself, it is reported that the operators will probably kill the well and work it over.

The well is located on a block of approximately 12,000 acres, in Section 58, H.&T.C. Survey, and opens up the third field for Chambers County, the other fields being Barbers Hill and Lost Lake, both being located farther northwest.

Approximately 6 miles southeast of the above test, Sun Oil Co.'s No. 1 Hamilton in Section 128, T.&N.O. Survey, encountered heaving shale at 9,055 feet and is now shut down to mix mud.

Good Well in Dickinson Field

More importance was added to the Dickinson Field, Galveston County, when Humble Oil & Refining Co. completed its No. 1 H. O. and W. G. Jones, approximately 4,000 feet northeast of its No. 1-B Maco Stewart in the J. O. Sherman Survey, for the best well to be completed in the field. It made 850 bbls. of 37.5 gravity oil per day through a three-eighths inch choke, with tubing pressure 1,575 pounds and shut-in casing pressure 2,975 pounds. It is bottomed in the Frio sand at 8,039 feet, with 7-inch casing cemented at 8,010 feet. This completion definitely establishes this field as one of major importance. The discovery well, Humble Oil & Refining Co.'s No. 1-B Maco Stewart, was completed for an initial production of 129 bbls. per day at a plugged depth of 8,024 feet, while Pure Oil Co.'s No. 1 Shelor, located northeast in the B.B.B.&C. Survey, was completed as a distillate producer. It is reported that Pure Oil will probably announce location for its second test, within a short time. In the southeast part of the field, the deep test of Humble Oil & Refining Co., No. 1 Danielson, in the John Seller Survey, is coring in hard sand below 8,887 feet, after a drill stem test from 8,740-8,803 feet tested eight stands of gas-cut mud. The same company's No. 1 A. H. and E. H. Schaper, approximately 4,000 feet southwest of No. 1-B Maco Stewart, is coring in hard sand, carrying a gas odor, below 8,461 feet.

At the end of the week, considerable attention was centered on Hill and Hill's No. 1 Wharton, a wildcat test in the western part of Harris County, which is coring below 6,603 feet in shale, and is thought to be in the Cockfield formation, although the top had not been picked. It is located in Section 5, W.C.R.R. Survey and is reported by many to be checking "high." Johnston and Johnston have made an interesting location for their No. 1 fee land, located in the South Houston district, in the H.&T.B. Survey No. 5. Machinery is being moved in for the test, located 330 feet south and 300 feet east of the northwest corner of a 20-acre tract. The test is located on a block of approximately 4,000 acres, which has been worked seismograph and torsion balance geophysical methods, and is scheduled to be drilled to 6,000 feet.

The outcome of T. S. & F. Oil Co.'s No. 1 J. B. Hine, another interesting Harris County wildcat test, was being awaited over the week-end, while the operators prepared to drill the plug. It is reported to have topped saturated Miocene sand at 3,508 feet, and is bottomed in sand at a corrected depth of 3,524 feet, with 7-inch casing cemented at 3,503 feet. It is located in the Lynchburg area, east of Houston, on a block of 2,000 acres in the Arthur McCormick Survey. Two failures were marked up for the county. West of Houston, on what is known as the Addicks area, Cockburn Oil Co. and others' No. 1 Herman Hospital, in the William Hardin Survey, cored sand with a salty taste from 7,575-77 feet and was abandoned at a total depth of 7,596 feet in the Upper Saline Bayou, reported topped at 7,287 feet. No sand was encountered in the Cockfield formation, which was topped at 7,005 feet. Southeast of Houston, in the W. P. Harris Survey, Red Bluff Oil Co. abandoned its No. 1 E. P. Seureau at a total depth of 6,028 feet.

Brazoria County

In the Hastings Field, northeastern Brazoria County, Stanolind Oil & Gas Co. was preparing to test its No. 1 Miller, located approximately 2,000 feet east of the discovery. It cored sand showing oil from 5,972-93 feet, and the operators cemented 7-inch casing at 5,977 feet. It is bottomed in shale at 6,009 feet. The discovery well, No. 1 J. W. Surface, which was recompleted March 2, has been killed and the tubing is being pulled preparatory to deepening. Before being killed it has produced a total of 1,838 bbls. The operators continue to have trouble with escaping gas which shows up between the 13⅜-inch casing and the 9⅝-inch casing. Approximately 2,100 feet south of the discovery, the company's No. 1 Steve Paul is drilling in shale and lime below 5,888 feet.

Hardin County

On the east flank of the Sour Lake Field, Hardin County, Alpha Petroleum Co.'s No. 3 Weiss, in the H. Williams Survey, which indicated production possibilities from the Cockfield sand several weeks ago, when it flowed from 10 to 15 bbls. of fluid per hour at a total depth of 6,774 feet, was swabbed in again and it is estimated to have made 50 bbls. of oil with a small amount of wash water per hour through a one-half inch choke, with tubing pressure 600 pounds for two hours, but sanded up and quit flowing, and the operators are now pulling tubing. This is the third test to be drilled on the east flank of the dome. Two other tests which were drilled encountered favorable showings, but failed to make commercial wells.

Slightly southeast of the above well, Sun Oil Co.'s No. 2 Bernard, in Section 69, H.T.&B. Survey, encountered sand showing oil and gas from 7,384-7,408 feet, and after screen and liner was set, it was swabbed for one hour and built up tubing pressure to 750 pounds through a one-quarter inch choke, blowing gas with a small amount of wash water and oil. It blew for three hours and then went dead.

Matagorda County

In the Shepherd Mott area, Matagorda County, Cockburn Oil Co. is skidding derrick from its No. 6 Hawkins, which was recently abandoned at 5,803 feet, and is preparing to start No. 7 Hawkins, approximately 150 feet northwest of the dry hole in the D. McCarthy Survey. In the same area, H. M. Smith's No. 1 Wadsworth, in the S. R. Fisher Survey, is drilling in shale below 5,950 feet. The operators attempted to make a drill stem test in sand from 5,663-79 feet, but could not get the testing tool below 4000 feet. In a core from 5,663-79 feet it showed salt water.

In southwestern Wharton County, John Deering's No. 1 C. T. and D. Kountze, in the S.A.&M.G. Survey, is coring in sand below 6,225 feet. Salt water sand was cored from 5,644-54 feet and from 6,142-60 feet. Texas Co.'s No. 1 Pierce Estate, in the I.&G.N. Survey, is drilling in lime below 4,505 feet. It topped the Discorbis at 4,035 feet.

Starting New Work

Kirby Petroleum Co. is building derrick for a wildcat test in the southeastern part of Polk County for its No. 1 Kirby Lumber Co., located 1,200 feet north, 40

Wildcat Operations on Gulf Coast

Week Ending March 16

RACCOON BEND—AUSTIN COUNTY

Humble O. & R. Co.'s No. 14-X Woodley, 354 ft. W from No. 8, 418 ft. from easterly NE line, 375 ft. from most easterly N cor. of lease.
16-in. csg. at 75 ft.

Humble O. & R. Co.'s No. 7 Bellville, 550 ft. from NW line, 500 ft. from SW line, Wm. Smeathers & White Sur.
Top sand 3,940 ft.; 7-in. csg. cmtd. 3,926 ft.; testing.

Humble O. & R. Co.'s No. 11-X Walton, 952 ft. from NW cor., 289 ft. at R/A from NE line, Wm. C. White Sur.
7-in. csg. 3,916 ft.; I.P. 58 bbls. per hr.; tubing pressure 455 lbs.

Humble O. & R. Co.'s No. 7-X Wilson, 2,095 ft. from SW cor., 464 ft. at R/A from SW line, Wm. Harvey Sur.
T.D. 4,323 ft.; swabbing.

BLUE RIDGE—BRAZORIA COUNTY

Trens-State Oil Co.'s No. 1 Blakely, Edward Drew Sur.
Drlg. shale 3,563 ft.

San Jacinto Oil Co.'s No. 6 Blakely, 150 ft. N of No. 5 Blakely, Edward Drew Sur.
Location.

DANBURY—BRAZORIA COUNTY

Shell Pet. Corp.'s No. 7 Blakely-Winston, 62 deg. 11 min. E, 5,540 ft. N, 26 deg 49 min. W, 200 ft. from SW cor. of Blakely-Winston 560-ac. tract, H.T.&B. Sur.
T.D. 6,253 ft.; P.B. to 6,000 ft.

Shell Pet. Corp.'s No. 3 Haury, 800 ft. SE of No. 2 in line with No. 2 and No. 1 Blakely-Winston, H.&T.B. Sur. No. 13.
T.D. 7,168 ft.; making 41,000 ft. of gas daily.

DAMON MOUND—BRAZORIA COUNTY

Gulf Stream, Inc.'s No. 1 Cave Heirs, 160 ft. from N line and 60 ft. from E line of Lot C, Blk. 50, A. Darst Sur.
T.D. 1,744 ft.; P.B. to 1,300 ft.; drilled to 1,668 ft.; tested 3 bbls. S.W.; abd.

Esco's No. 1-D Wisdom, 25 ft. from S and W lines of Blk. D, Lot 5, A. Darst Sur.
T.D. 1,509 ft.; prepare to pump.

Intercoastal Oil Co.'s No. 13 Wisdom, 150 ft. from NW line and 10 ft. from SW line of Lot "D," Blk. No. 51.
Rig up.

HASTINGS—BRAZORIA COUNTY

Stanolind O. & G. Co.'s No. 1 Wooten, 466 ft. S of N line, 466 ft. from SE line of 76-ac. tract, A.C.H.&B. Sur. No. 1.
Drlg. sand and shale 4,110 ft.

Stanolind O. & G. Co.'s No. 1 W. J. Miller, 466 ft. out of SW cor. of the Miller 2,939-ac. tract, in A.C.H.&B. Sur. No. 2.
2,000 ft. E of discovery well.
T.D. 6,009 ft.; 7-in. csg. 5,977 ft.; drilling plug.

Stanolind O. & G. Co.'s No. 1 Steve Paul, 476 ft. from the E line and 466 ft. from N line of 160-ac. tract, A.C.H.&B. Sur. No. 2, 2,100 ft. S of discovery well.
Drlg. shale and lime 5,188 ft.

MANVEL—BRAZORIA COUNTY

Texas Co.'s No. 2 Gulf Coast Home Co., 347 ft. S, 441 ft. W from NE cor. of Lot 38, H.T.&B. Sur. No. 2-B.
Rigging up.

Bowles & Borsodi's No. 2 Norvell Investment Co., C of Lot 57, H.&T.C. Sur.
Derrick.

Gulf Prod. Co.'s No. 1 T. L. Ellis, 330 ft. each way out of S cor. of 80-ac. lease, H. Little Sur.
Drlg. sand 3,794 ft.

J. W. Sorrells' No. 1 Swift, Blk. 21, Abst. 313, H. N. Little Sur.
Derrick.

Sterling O. & R. Co.'s No. 1 W. A. Gamble, 300 ft. from E line and center N and S of Lot 78, R. Little Sur.
Drlg. shale 2,350 ft.

R. H. Stone's No. 1 H. McCauley, 350 ft. from E line, 200 ft. from S line of Lot 2, A.C.H.&B. Sur.
7-in. csg. 3,970 ft.; to test.

Texas Co.'s No. 6 Ewing, 330 ft. N, 47 deg., 59 ft. W and 263 ft. S, 41 deg., 40 ft. W of SE cor. of lease.
T.D. 4,045 ft.; P.B. to 3,635 ft.; 7-in. csg. 3,635 ft.

Texas Co.'s No. 1 C. P. Dawson, 2,475 ft. S, 441.9 ft. W of NE cor. of Lot 59, H.T.&B. Sur. No. 23.
T.D. 5,645 ft.; 7-in. csg. 5,627 ft.; waiting on orders.

Texas Co.'s No. 3 A.R.G.G.H. Co., in C of Lot 37, H.&T.C. Sur. No. 23.
Drlg. sand 5,946 ft.; no show.

Texas Co.'s No. 17 Houston Oil Fields Assn., 244 ft. S, 244 ft. W, from NE cor. of Lot 1, A.C.H.&B. Sur. No. 91.
Location.

Texas Co.'s No. 16 Houston Oil Fields Assn., 247 ft. S, 440 ft. E from NW cor. of Lot 19, A.C.H.&B. Sur., No. 91.
Location.

Texas Co.'s No. 1 J. L. Lemmer, 330 ft. S 48 deg. E and 330 ft. N, 42 deg. E of W cor. of lease, Thomas Sproggins Sur., Abst. A-366.
Cored sand showing oil and gas 4,122 ft.

Texas Co.'s No. 2 Dawson, 247 ft. S, 241 ft. W of NE cor. of Lot 58, H.T.&B. Sur. No. 23.
Location.

Texas Co.'s No. 1 L. C. Dawson, 247 ft. S, 441 ft. W of NE cor. of Lot 49, H.T.&B. Sur. No. 23.
Moving in material.

Texas Co.'s No. 2 Dawson, 247 ft. S, 441 ft. W of NE cor. Lot 48, H.T.&B. Sur. No. 23.
Rig up.

Texas Co.'s No. 3 F. Lieder, 247.5 ft. S and 247.5 ft. E of NW cor. of Lot No. 3, A.C.H.&B. Sur.
Location.

Trumba Oil Co.'s (J. M. Campbell) No. 1 H. McCauley, 150 ft. each way out of NE cor. of W 5 acres of Lot No. 2, A.C.H.&B. Sur. No. 91.
Location.

Windsor Oil Co.'s No. 2 Colby, 660 ft. SW of No. 1, center of tract N and S Tract 20, T. Spraggins Sur.
Drlg. shale 3,327 ft.

PLEDGER—BRAZORIA COUNTY

Humble O. & R. Co.'s No. 1 T. L. Smith, 1,283 ft. NE from W cor. of 88.86-ac. lease, thence 887 ft. SE at R/A, D. McNeel Sur.
Rig up.

STRATTON RIDGE—BRAZORIA COUNTY

Amerada Pet. Corp.'s No. 1 Seider & State, 225 ft. due N of No. 3.
Fishing 4,755 ft.

Thompson Drlg. Co.'s No. 1 Seaburn Est., Austin & Williams one-half league.
T.D. 4,770 ft.; stuck drill pipe at 4,300 ft.; sidetracking.

WEST COLUMBIA—BRAZORIA COUNTY

Sterling O. & R. Co.'s No. 4 Hogg, 200 ft. S of No. 1, 50 ft. from W line of lease, Martin Verner Sur.
T.D. 5,298 ft.; cmt. back to 4,850 ft.; drilled out cmt. to 5,196 ft.; S.D.

Texas Co.'s No. 84 Hogg, 2,433 ft. N, 50 ft. W from SE cor. of lease, M. Varner Sur.
Temporarily S.D. 5,242 ft.

BARBERS HILL—CHAMBERS COUNTY

Moody Corp.'s No. 1-C R. W. Barber, 302

(Continued on Page 90)

degrees west from the northwest corner of the George Loving Survey. It is northwest of two dry holes drilled by the company in the J. Stephenson Survey.

Two and one-half miles southwest of Plantersville, Grimes County, in the Blake Brantley Survey, Anderson & Kerr Drilling Co. has made location for its No. 1 R. Leuders, 500 feet south of the north line and 1,200 feet east of the west line of 320-acre tract and survey. Six miles east of Willis in Montgomery County, Travis Baker and others have erected derrick for their No. 1 Foster Estate, in the extreme northeastern part of the county, located 1,200 feet east of the west line and 700 feet south of the north line of Block No. 50 in the J. M. De La Garza Survey.

C. B. Bunte, Inc., has announced location for a wildcat test north of the town of Rosenberg in the center of a 350-acre tract in the Samuel Isaacs Survey. It is to be drilled on the Kate Winston lease and is scheduled to be a 7,500-foot test. It is south of a dry hole drilled by Phillips Petroleum Co. on its Holmes lease. The block, which consists of approximately 4,500 acres, has been worked with torsion balance geophysical work and subsurface geology. Turnbull & Irwin's No. 1 Herman Hospital Estate in the Jessie H. Cartwright Survey is drilling in hard lime below 4,412 feet. It topped the Discorbis at 4,413 feet.

In the Bosco Pool

Superior Oil Producing Co.'s No. 1 Domingua, which was reported last week as a possible 1,000-foot south extension to the Bosco Field, Acadia and St. Landry Parishes, Louisiana, was completed for an initial production of 126 bbls. in 24 hours, with tubing pressure 1,050 pounds and casing pressure 1,050 pounds, through an eight-sixty-fourths inch choke. It is bottomed at 8,740 feet, with 7-inch casing cemented at 8,727 feet. Location is in Section 34-8s-3e. The same company's No. 7 Larcade, within the proven limits of the field was completed for one of the best wells in the field when it made 74 bbls. per hour through a fourteen-sixty-fourths inch choke, with tubing pressure 1,850 pounds and casing pressure 2,700 pounds from a total depth of 8,700 feet. Three new locations were announced by Superior Oil Producing Co. No. 2 Malancon was located in Section 33-8s-3e; No. 6 Hernandez was staked in Section 34-8s-3e, and No. 4 Iseringhauser was located in Section 35-8s-3e.

New Well in Gillis Pool

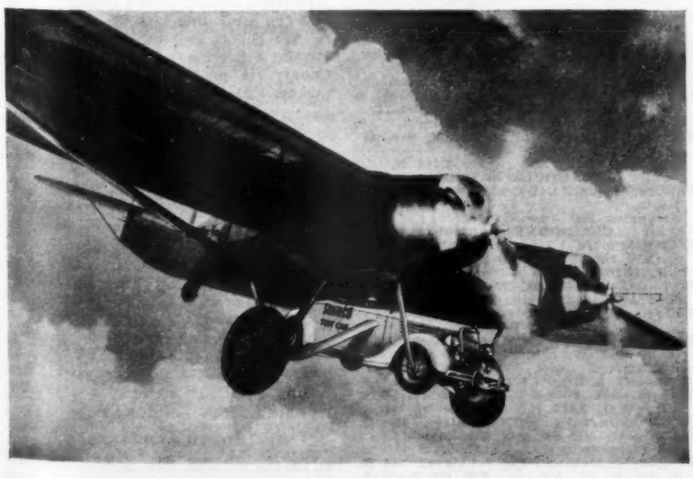
In the Gillis Field, Calcasieu Parish, Texas Co.'s No. 1 Nickerson, in Section 12-9s-8w, was washed in the middle of the week and made 15 bbls. of distillate per day under a tubing pressure of 2,400 pounds. It topped the sand at 6,709 feet and was cored to 6,721 feet, the total depth. It is believed that the casing was set too high in the gas and the operators have killed the well and are drilling deeper. Two tests being drilled by Union Sulphur Co. are beginning to look doubtful. Its No. 1 Buhler in Section 11-9s-8w is coring in shale below 7,139 feet and has apparently missed the deep pay found in Fohs Oil Co.'s No. 1 Castle, which is producing from 7,065 feet. The company's No. 1 Castle in Section 13-9s-8w is coring in sandy shale below 7,083 feet and has failed to pick up any saturation.

In the Roanoke Field, Jefferson Davis Parish, Shell Petroleum Corp.'s No. 1 Carter, located a quarter of a mile north of production, has apparently extended the field by coring saturated sand from 8,684 to 8,694 feet, and is now waiting on cement to set. It will probably be tested the latter part of the week. Although its depth is somewhat deeper than the company's discovery well, it is believed to be the same sand. It is located 660 feet north and 330 feet west of the southeast corner of the lease in Section 1-9s-4w. Humble Oil & Refining Co.'s No. 1 Martin Kratzer, in the same part of the field, which was completed for a gas well a few months ago, is being prepared to drill deeper in hopes of picking up the same sand. It was completed at a total depth of 8,830 feet. Shell Petroleum Corp.'s No. 1 Jarnigan, a deep test which tried to blow out at 10,001 feet, is still fishing for a stuck drill stem. Another test is to be made at Humble Oil & Refining Co.'s No. 3 Devilbiss, a deep test southwest of the discovery well which has had some favorable showings below 9,000 feet. The operators were running tubing late in the week, after they had perforated the casing from 9,198-9,203 feet.

HOUSTON OIL CO.

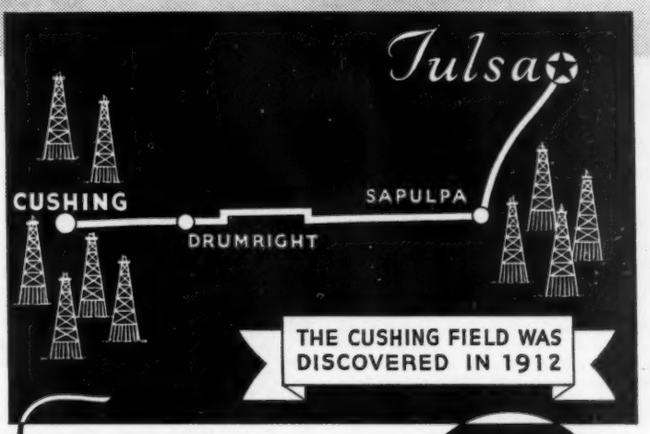
HOUSTON, Tex., Mar. 18.—At the annual meeting of the stockholders of the Houston Oil Co. of Texas, the board of directors was re-elected as follows: Holman Cartwright, David Hannah, George A. Hill, Jr., A. H. Kennerly, George D. Sears and A. W. Standing, all of Houston; Samuel C. Davis, Samuel W. Fordyce, Jr., George E. W. Luerhmann, B. H. Lang, Thomas S. Maffit and Ethan A. H. Shepley, all of St. Louis, and L. S. Zimmerman of Baltimore.

Mile High Starting Test Conducted With Airplane



In a small standard make car suspended from a transport plane, a novel test was recently conducted over Floyd Bennett Field in New York. The car was taken to an altitude of one mile and the starting quality of Blue Sunoco gasoline was tested under the severe conditions at that altitude. The drag of the car due to air resistance was a much greater hindrance than the actual weight of the car.

AFTER GLENPOOL CAME *CUSHING!*



Establishing OIL *as* OKLAHOMA'S TRADE-MARK

It is no exaggeration to say that the discovery of oil at Cushing was the most important event in the ten-year period that followed the opening of the Glen Pool Field. Soon this new Cushing Field had a production of over 300,000 barrels of oil per day, which permitted the distribution of fabulous wealth to land owners, lease holders, and oil company operators never before known in the great Southwest.

Even in those early days this bank took part in many important transactions, as the development of the petroleum industry progressed and the need for oil company financing became more essential.

We feel that our understanding of the importance of sound finance in the fulfillment of oil company contracts has been constantly enriched year after year by a knowledge gained through each new experience, and this enables us to render competent assistance to qualified individuals and companies engaged in the oil business. The officials of this bank are ready and willing at all times to discuss problems of oil finance.

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Drilling More Active in Louisiana and Arkansas but Only Seven Completions Are Reported

By J. R. CRUMPTON
Staff Correspondent, Louisiana-Arkansas

SHREVEPORT, La., Mar. 18.—Drilling reports from the Louisiana and Arkansas districts during the past seven days show an increase in activity over the past few weeks, but there were no wildcats of note on test and only seven completions were listed in the whole division. Twelve new locations were staked, 10 in North Louisiana and two in Arkansas, only two of which were in wildcat territory and which may be termed as hot tests of any importance.

NORTH LOUISIANA

This district reported four completions consisting of two oil wells, one gas well and one dry hole. Meyers and others' No. 1 Davidson, Section 16-20-15, Caddo Parish, in the Pine Island area, is flowing 80 bbls. daily from 2,207 feet after setting 7-inch casing at 2,180 feet. In the same section, a recent extension of the old Pine Island Field, Tooke & Reynolds' No. 2 Levy is a 125-bbl. pumper from 2,212 feet. In the shallow Blanchard gas field the Texas Trading Co.'s No. 1 A. T. Curry, Section 28-19-16, was a small gasser, gauging 250,000 feet of dry gas from a total depth of 952 feet. The production is coming from the Nacatoch and had a rock pressure of 200 pounds. In the Converse Field, Sabine Parish, Helena Oil & Gas Co.'s No. 1-B Graham, Section 20-9-13, has been shut down waiting orders since December of last year after pumping large amounts of salt water from 2,000 feet, and was finally abandoned at that depth.

Of the 10 new locations reported in this district, the Plain Dealing Syndicates' No. 1-A Bollinger, Section 31-23-12, in the northern part of Bossier Parish, is the only wildcat of note, the other new operations being in proven or semi-proven territory. This is the third test on a block of 18,000 acres in this area looking for Blossom production, the other two being dusters. Caddo Parish, particularly the old producing areas, continues to get a good play with four new operations started. About 4 miles east of the town of Doyline in Webster Parish, Virgil Likens is moving in derrick timbers and rig on his No. 1 E. L. Stewart in Section 23-18-10. As stated last week, this test has a contract to drill to 3,000 feet and is surrounded by 5,000 acres of leases. W. T. Coleman is drilling at 730 feet on his No. 1 Hill, Section 19-12-11, a new test recently begun in De Soto Parish. In Red River Parish, Sterling Oil & Refining Co.'s No. 1 Long Bell Lumber Co., Section 19-13-9, is rigging up to deepen from 2,828 feet. This test was abandoned as dry at this depth in February of this year. In the Converse area, Sabine Parish, Lawson-Leavell & Bryant has derrick up in No. 4 Bank of Pleasant Hill, Section 29-9-13, and in Union Parish Southern Carbon Co. has staked location for its No. 67 fee in Section 5-20-4e.

Drilling Operations

Other drilling operations in the North Louisiana district follows: Bienville Parish, Saline Drilling Co.'s No. 1 Pardee, Section 27-14-6, shut down for fuel at 3,260 feet after a show of gas from 4 feet of sand at 2,870-74 feet; Bossier Parish, W. A. Kirkland, trustee's No. 1 Jarrett & McKeller, Section 3-21-13, drilling at 1,015 feet; Caddo Parish, Alaska Oil Corp.'s No. 1 Dickerson, Section 15-19-14, drilling at 510 feet; Arkansas-Louisiana Gas Co.'s No. 2 Rodessa Oil & Development Co., Section 23-23-16, a Trinity gas test 2½ miles north east of the field, drilling in lime at 4,906 feet; J. Ed Bailey and others' No. 1 Hartzo, Section 28-22-16, fishing for drill stem at 1,172 feet; Gulf Refining Co.'s No. 8 Chew, Section 33-21-16, set 10-inch at 95 feet and 7-inch at 1,808 feet; Simplex Oil Co.'s No. 1 W. E Glassell, Section 36-20-15, drilling at 2,365 feet; G. R. Stevens' No. 2 Hart, Section 22-21-16, in the Trees City area, is rigging up on his second well; Texas Co.'s No. 3 School fee, Section 16-20-15, tested dry at 2,222 feet and is arranging to deepen; United Gas Public Service Co.'s No. 1 Fosque Unit, Section 28-23-16, in the Rodessa Field, is drilling in lime at 4,893 feet, and the same company's No. 1 Johnson Unit, Section 26 23-16, has set 10¾-inch casing at 2,100 feet. In Claiborne Parish, J. C. King's No. 1 Odis Webb, Section 21-21-8, northwest of the Homer Field, is reported to have encountered a good show of gas at 1,710 feet and is shut down, waiting orders pending a test at that depth. E. T. Oakes is rigging up on his No. 1 H. W. Patton estate, Section 1-20-5, after rebuilding derrick which was blown down. A wildcat in De Soto Parish, E. B. Bird and others' No. 1 A. D. Johns, Section 20-14-5, in the northwestern part of the parish near the Caddo Parish line, is rigging up and should spud in within the next few days. In the Converse area, Sabine Parish, Lawson-Leavell & Bryant's No. 1 Whiting Corp., Section 5-9-13, a deep test for that area, developed salt water on drill stem test at 3,160 feet and is coring ahead at 3,172 feet. Dave McConnell's No. 1 Whiting Corp., Section 3-9-13, is waiting on standard rig to pump from the base of the chalk rock at 1,956 feet.

ARKANSAS

The new district west of the town of Camden, recently discovered by one lone well from the Nacatoch, was practically eliminated as a possible oil field by two more dry holes in close proximity to the discovery well during the past week. T. J. Gaughan's No. 1 J. Humphrey, Section 30-13-17, tested salt water and was abandoned at 1,455 feet. J. D. Reynolds' No. 1 M. Bragg, Section 25-13-18, an offset to the discovery well, was abandoned in salt water at 1,405 feet. The discovery well in this area, T. J. Gaughan's No. 1 M. Bragg, Section 25-13-18, was completed as a 30-bbl. pumper of 17.5 gravity oil, but all efforts to extend production since that test has failed. The Rainbow Field, Union County, furnished the only producer in the Arkansas district during the past seven days. H. L. Hunt's No. 4 J. D. Gregory, an old well, deepened from the original pay, was completed as a 65-bbl. pumper from 3,419 feet. The well is in Section 10-17-14.

A wildcat test of more than passing importance has just been announced in the southern part of Columbia County, some of the leases extending south into Webster Parish, Louisiana. Dan Brooks has transferred 1,750 acres of a 4,200-acre block to Carey & Travis of Kilgore, Tex., and the drilling contract calls for a 3,500-foot test to begin not later than March 15. It is reported that this well has spudded in, and is in Section 10-20-22. Three different independent geologists of Shreveport have made favorable geological reports on the structure, which is about 5 miles north and west of the Red Rock area in Webster Parish on which two wells were drilled after discovery of the Haynesville Field in Claiborne Parish. Both of the Red Rock wells showed considerable oil from the Blossom, and the new area is indicative of another producing structure from about the same level. The Rainbow Field northeast of El Dorado has shown a steady decline in drilling operations during the past few weeks, due to the spotted production in the recently discovered lower red bed production. J. E. Crosbie, Inc.'s No. 2-A E. F. Gregory, Section 10-17-14, has all the earmarks of being a good pumping well, and is waiting on standard rig at a total depth of 3,361 feet. A deep test in this area, H. L. Hunt, Inc.'s No. 15 E. F. Gregory, Section 10-17-14, cored base of red beds at 5,630 feet. A deep test in the Smackover area, Gulf Refining Co.'s No. 49 L. Werner, Section 5-16-16, has set 10-inch subsurface casing at 2,293 feet. East of the town of El Dorado, Gordy Drilling Co.'s No. 1 Craig, Section 35-17-15, tested 60 feet of oil and an estimated 500,000 feet of gas in sandy shale from 2,211 feet and is temporarily shut down waiting orders.

MISSISSIPPI

Only a few wells in this district are actively drilling. In Issequena County Pelican Oil & Gasoline Co.'s No. 1 Martin & Bender, Section 11-12n-8w, has been shut down for several weeks curing titles on the block after a reported show of gas from a total depth of 3,227 feet. Seven-inch casing has been set in the hole at 3,100 feet. Snow Black Petroleum Co.'s No. 1 Fox, Section 30-7n-12w, Jones County, began operations on February 18, and is in sandy shale at 1,150 feet. In Lauderdale County, Bob Dalton's No. 1 Bounds, Section 34-7n-15e, is arranging to resume drilling from 560 feet after being shut down since September of last year. In the Amory Field, Monroe County, P. J. McAlpin's No. 1 Crook, Section 4-13s-18w, has set 7-inch casing at 1,880 feet and is drilling in slate at 1,935 feet. H. W. Elliott and others' No. 2 R. L. Parker, Section 14-14n-1e, Warren County, is temporarily shut down for fuel at 820 feet.

Estimated Production

Estimated daily gross production all companies week ending March 15:

NORTH LOUISIANA	
Bellevue	700
Caddo, Light	4,900
Caddo, Heavy	1,925
Converse	1,040
Cotton Valley	450
De Soto and Red River	1,435
Elm Grove	385
Haynesville	3,605
Holly	160
Homer	2,705
Pleasant Hill	195
Sarepta-Carterville	515
Urania	3,210
Zwolle	1,950
Total	23,175

SOUTH ARKANSAS	
Champagnolle	3,150
El Dorado	2,200
Lisbon	320
Miller County	1,335
Nevada	900
Smackover, Light	2,240
Smackover, heavy	17,965
Stephens	500
Urbana	2,185
Total	30,795

Wildcat Operations in Louisiana-Arkansas

(Rotary operations unless otherwise designated)

NORTH LOUISIANA

AVOYELLES PARISH

Bell Oil Co.'s No. 2 Thompson-Koltz, 450 ft. S, 350 ft. E, NW cor. Sec. 11-2n-5e.
Rigging up.
Southern Star Pet. Co.'s No. 1 O. G. Boyette, Sec. 26-3-5e.
S.D. 3,421 ft.

BIENVILLE PARISH

Saline Drlg. Co.'s No. 1 Pardee, Sec. 27-14-6.
S.D. for fuel 3,260 ft.

BOSSIER PARISH

W. A. Kirkland's No. 1 Jarrett & McKeller, 330 ft. N and W, S cor. NW NW Sec. 3-21-13.
Drlg. 1,015 ft.
Leonard Co.'s No. 1 Pearson, 250 ft. S and E, of C Sec. 22-21-14.
S.D. for fuel 2,405 ft.
Scott & Howard's No. 1 Sherrill, Sec. 13-19-12.
Partly rigged up and S.D.
R. L. Skidmore et al's No. 1 Davis, Sec. 12-18-13.
S.D. 1,150 ft.

CADDO PARISH

Alaska Oil Corp.'s No. 1 Dickerson, 150 ft. N and E, SW cor. NW NW.
Set 10-in. 108 ft.; drlg. 510 ft.
Ark.-La. Gas Co.'s No. 2 Rodessa O. & Devel Co., Sec. 23-23-16.
Drlg. lime 4,909 ft.
J. Ed Bailey, tr.'s No. 1 Hartzo, NW cor. NE NW Sec. 28-22-16.
Fishing for D.S. 1,172 ft.
W. T. Bell et al's No. 1 Bostick, 1,320 ft. E. 660 ft. N. SW cor. Sec. 12-22-16.
Fishing for baller 2,754 ft.
Cal.-La. Devel. Co.'s No. 1 Glassell, NW NE Sec. 11-19-15.
Set 10-in. 40 ft.
Gulf Ref. Co.'s No. 8 Chew, 100 ft. N, 400 ft. E, C Sec. 33-21-16.
Set 10-in. 95 ft.; set 7-in. 1,808 ft.
Hillman et al's No. 1 J. S. Noel Est., NE NE Sec. 12-20-16.
Rigged up and S.D.
A. D. King, tr.'s No. 1 Roach, 641 ft. E, 375 ft. N, SW cor. SE Sec. 4-14-16.
S.D. 2,128 ft.
Meyers et al's No. 1 Davidson, 790 ft. W. 200 ft. S, NE cor. SE Sec. 16-20-15.
Comp.; flowing 80 bbls.; 2,207 ft.
Press & Lambert's No. 1 Hughes, Sec. 15-20-15.
W.O.S.R. 2,201 ft.
Press & Lamberts' No. 1 Robertson, 300 ft. N and E, SW cor. SE Sec. 15-20-15.
Rigging up.
Recovery Oil Co.'s No. 1 W. L. Sibley, Sec. 15-19-14.
Fishing for D.S. 2,050 ft.
A. C. Scott et al's No. 1 Noel Est., 330 ft. S and E, NW cor. Sec. 22-20-15.
Set 10-in. 40 ft.; drlg. 1,600 ft.
Simplex Oil Co.'s No. 1 W. E. Glassell, 660 ft. N and W, SE cor. Sec. 36-20-1s.
Drlg. 2,365 ft.
G. R. Stevens' No. 2 Hart, Sec. 22-21-16.
Rigging up.
Texas Co.'s No. 3 School fee, Sec. 16-20-15.
Tested dry 2,222 ft.; arranging to deepen.
Texas Trading Co.'s No. 1 A. T. Curry, 660 ft. N and E, SW cor. NW Sec. 28-19-16.
Comp.; 250,000 ft. of gas; 952 ft.
C. A. Tooke's No. 1 fee, 104 ft. S and W, NE cor. SE Sec. 16-20-15.
Set 10-in. 80 ft.; drlg. 1,600 ft.
Tooke & Reynolds' No. 2 Levy, 300 ft. S and E, NW cor. SE NE Sec. 16-20-15.
Comp.; pumping 125 bbls.; 2,212 ft.
V. & F. Oil Co.'s No. 2 Ethison, Sec. 16-20-15.
Set 2-in. tubing and packer 2,203 ft.

CATAHOULA PARISH

Phillips et al's No. 1 Central Lbr. Co., Sec. 2-9-6e.
Arranging P.B. from 3,016 ft.

CLAIBORNE PARISH

J. C. King's No. 1 Odes Webb, 330 ft. S and E, NW cor. NW NE Sec. 21-21-8.
S.D. 1,710 ft.
E. T. Oakes' No. 1 H. W. Patton Est., 660 ft. S and W, NE cor. Sec. 1-20-5w.
Rigging up.

DESOTO PARISH

E. B. Bird et al's No. 1 A. D. Johns, 330 ft. N and W, center Sec. 20-14-6.
Rigging up.
Century O. & Drlg. Co.'s No. 1 Morton, 300 ft. N and E SW cor. SE NE Sec. 27-11-14.
S.D.; W.O. 2,825 ft.
G. O. Collins' No. 1 J. H. Riggs, 450 ft. S and W, NE cor. SW Sec. 21-14-13.
Set 10-in. 40 ft.
Dempsey & Manziel's No. 1 Thigpen, 375 ft. S, 330 ft. W, NE cor. SW NE Sec. 33-13-13.
S.D. 1,745 ft.
DeSoto Pet. Co.'s No. 1 B. Y. Wemple, C S½ SE NE SW Sec. 14-12-11.
S.D.; repairing rig; 2,110 ft.
E. L. Foster's No. 1 Youngblood, Sec. 9-11-14.
S.D. 1,830 ft.

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Kansas Again Breaks Its Production Record With an Average Mark of 149,741 Bbls. Per Day

By JAMES McINTYRE

Kansas broke its production record again in the past week with an average output of crude oil of 149,741 bbls. per day. The Burrton Pool produced 25,125 bbls. per day, the first time that big pool has been permitted to reach the 25,000-bbl. mark. As an indication of how easy it is for Burrton to produce 25,000 bbls. per day it may only be said that seven most recent wells, completed and near-completed, produced 19,746 bbls. in their 24-hour tests. This was an average of one well per day and 2,800 bbls. per well in initial production.

Estimated Production

Estimated daily average production of Kansas for the week ended March 16 and for the preceding week follows:

	Barrels	
	Mar. 16	Mar. 9
Haury-Burrton	25,125	22,875
Hollow	5,325	5,100
Ritz-Canton	8,650	10,000
Voshell	7,100	5,625
Johnson	2,210	2,450
Nikkell	4,950	5,250
Sedgwick County	9,325	9,925
Ellsworth County	4,210	5,070
Barton County	1,540	1,650
Rice County	21,646	18,175
Ellis County	450	280
Kingman County	1,065	1,190
Stafford County	1,830	1,740
Russell County	12,600	10,850
Greenwood County	10,500	10,500
Butler County	18,900	18,800
Other pools	14,315	14,045
Total Kansas	149,741	143,625

Elk County

Central Oil Co. and Leo Morgan abandoned their No. 1 Dexter, SE SE NW Section 21-32-12, Elk County, at a total depth of 1,437 feet. Sand at 1,205-36 feet showed very small production when shot.

Sedgwick County

E. B. Shawver's No. 4 Brookings, SE SW SW Section 16-28-1e, Sedgwick County, flowed 213 bbls. in 24 hours from Chat at 3,089-3,116 feet, which had been acidized. It was not completed.

Phillips Petroleum Co. had cellar dug for No. 3 Nolan, NE NW NW Section 21-28-1e.

Stafford County

Atlantic Oil Producing Co.'s No. 1 Guthrie, C NW NW Section 15-25-11w, Stafford County, which found only salt water in Siliceous lime at 4,104-08 feet, was abandoned.

Reno County

Shell Petroleum Corp.'s No. 1 Hoskinson A, 2,649 feet north and 1,317½ feet west of SE cor. Section 9-24-4w, Reno County, which was dry in Siliceous lime at 3,847 feet, total depth 3,950 feet, was plugged back to 3,847 feet in the Simpson series, and will be tested.

Barnsdall Oil Co.'s No. 8 Sabin B, SE NE NE Section 11-23-4w, pumped 1,634 bbls. of oil in 24 hours from Hunton lime at 3,607-10 feet and was then acidized. Same company's No. 9 Sabin C, SE NW SE Section 11-23-4w, pumped 865 bbls. of oil in 24 hours from Hunton lime at 3,573-94 feet, and was then acidized. Same company's No. 10 Sabin C, NE SE SE Section 11-23-4w, pumped 48 bbls. of oil and 465 bbls. of water in eight hours from Hunton lime at 3,608-17 feet.

Gypsy Oil Co. and Empire Oil & Refining Co. completed No. 1 Sabin, NW cor. Section 13-23-4w, as a gas well. It produced 11,000,000 feet of gas at 3,378 feet. It had been plugged back from Hunton lime at 3,611-12 feet which did not respond profitably when acidized.

Olson Oil Co. and Shell Petroleum Corp.'s No. 1 Harner, SE SE NW Section 14-23-4w, was completed. It had been acidized at 3,600-18 feet and responded with a production of 3,276 bbls., pumping and flowing, in 24 hours. Same companies' No. 2 Harner, NE NE NW Section 14, produced 4,193 bbls. of oil in 24 hours, pumping and flowing, after an acid treatment at 3,615-25 feet. It was completed.

Olson Oil Co., Shell Petroleum Corp. and Continental Oil Co.'s No. 5 Blake, 860 feet from south and 990 feet from east lines of SW quarter Section 23-23-4w, was acidized in Hunton lime at 3,590-3,614 feet and produced 2,190 bbls. of oil, cut 4 per cent. It was completed.

Same operators' No. 6 Blake, NW NE SW Section 23-23-4w, flowed 250 bbls. of oil in two and one-half hours from Hunton at 3,585-3,606 feet.

Olson Oil Co. and Shell Petroleum Corp.'s No. 5 Duckworth, NW NE NE Section 23-23-4w, after a hole full of oil from Hunton lime at 3,588-3,620 feet.

Deal Oil & Gas Co. completed No. 3 McElwain, NW NE SE Section 34-23-4w. It was acidized in Hunton at 3,582-94 feet and pumped and flowed 5,588 bbls. in 24 hours.

Olson Oil Co. and Sinclair Prairie Oil Co.'s No. 3 Adkins, C NE SW Section 36-23-4w, set 5-inch pipe at 3,313 feet and drilled to 3,371 feet. The well showed an 11,000,000-foot gas production with some oil. It produced 23,000,000 feet of gas in 24 hours at a total depth of 3,310 feet.

Johnson & Carey's wildcat test, No. 1 Dyck, SE NE SE Section 35-22-5w, had Siliceous lime at 4,064-70 feet with a hole full of water and it was shut down for orders.

Engler and others' No. 1 Calzer, SE SE NW Section 36-22-4w, was abandoned at 3,642 feet. It swabbed 25 bbls. of oil after an acid test and then filled 3,400 feet with water.

New work in the county included Sinclair Prairie Oil Co.'s No. 5 Harner, NW NE SE Section 14-23-4w, cellar dug; Sinclair Prairie Oil Co.'s No. 6 Base, NW NW SE Section 26-23-4w, a location; National Union Oil Co.'s No. 1 Myers, SE NE NW Section 34-23-4w, cellar; Dickey Oil Co. and Indian Territory Illuminating Oil Co.'s No. 3 Baughman, C NW NE Section 3-24-4w, location; Texas Co.'s No. 1 Carmichael, C NW SW Section 10-24-4w, cellar dug.

Butler County

In Butler County, Sheldon & Wixson's No. 1 Moore, NW SE SE Section 36-24-3, was completed. It is a 50-bbl. pumper at a total depth of 2,688 feet.

Maxwell Oil & Gas Co.'s No. 1 Maxwell, NE NE SE Section 31-24-4, was dry and abandoned at 2,769 feet.

Harvey County

Marathon Oil Co.'s No. 1 Duerkson, SE SE NE Section 19-22-3w, Harvey County, was completed a 75-bbl. pumper from Hunton lime at 3,502-13 feet. It was an old well deepened from 3,488 feet. Same company's No. 7 Duerkson, NE cor. Section 19-22-2w, deepened from 3,467 feet to Wilcox sand at 3,587-95 feet, where it was barren, was plugged back to 3,513 feet, where it made a 10-bbl. well.

Greenwood County

Henderson & Holden's No. 1 Norton, 990 feet from north and 250 feet from east lines of SE quarter Section 16-22-12, Greenwood County, was dry and abandoned at 1,872 feet.

McPherson County

Shell Petroleum Corp. completed No. 7 Decker, 330 feet from south and 1,025 from west lines of SE quarter Section 11-19-2w, Ritz-Canton Pool, McPherson County. It pumped 57 bbls. of oil and 145 bbls. of water after an acid treatment in Viola lime at 3,352-60 feet.

J. Allison and others' No. 1 Chindberg, SE NW SE Section 19-18-2w, Larson Pool, is a 95-bbl. completion producing from Kansas City lime at 2,289-98 feet.

Shell Petroleum Corp. was building rig for No. 4 Lovett, 1,314 feet south and 3,302 feet east of NW cor. Section 13-19-

(Continued on Page 82)

Wildcat Operations in Kansas

Week Ending March 16

(Descriptions are East unless marked otherwise)

BARBER COUNTY

Sam Jarvis et al's No. 1 Morrisse, C SE NE Sec. 23-30-10w.
Rig.

Southern Drlg. Co. et al's No. 1 Davis, 330 ft. from W and 330 ft. from S lines of NE Sec 13-34-15w.
S.D. 2,865 ft.

BARTON COUNTY

D. I. Hall et al's No. 1 Arnold, SE SE SW Sec. 19-18-15w.
Moving in tools.

McMorrow & Spencer's No. 1 Hagen, NE cor. Sec. 33-20-11w.
Drlg. 1,700 ft.

C. L. Price et al's No. 1 Ehrlich, NW SE Sec. 10-16-13w.
T.D. 360 ft.; fishing.

Suppes & Witt's No. 1 Hayes, SW cor. Sec. 7-16-15w.
Ponds.

BUTLER COUNTY

Trees & Harwood's No. 1 Henley, SW SE NE Sec. 7-24-8.
Drlg. 760 ft.

CLAY COUNTY

Seidel Bros.' No. 1 Younken, C S½ SE NW Sec. 21-9-4.
T.D. 1,775 ft.; running liner.

COWLEY COUNTY

Tom Palmer's No. 1 Wentworth, NW NW NE Sec. 9-35-2.
Shot with 15 qts. at 3,412-17 ft.; pumped 60 bbls. oil, 2 bbls. wtr.

Lloyd, Frost & Study's No. 1 Weathered, SW SE SE Sec. 28-31-3.
Spudded.

A. McCoy's No. 1 Brandenburg, SW SE SE Sec. 17-34-5.
T.D. 715 ft.; fishing.

Wakefield et al's No. 1 Newton, SE cor. Sec. 21-30-2.
Rig.

ELLSWORTH COUNTY

Carter Oil Co. et al's No. 1 Teuber, 440 ft. N and W of C Sec. 26-17-9w.
K.C. lime 2,846 ft.; T.D. 2,963 ft.; will lower 8-in. csg.

Lario O. & G. Co.'s No. 1 Wright, SW SW NE Sec. 17-16-8w.
Drlg. 1,623 ft.

Lario O. & G. Co.'s No. 1 State, SW cor. Sec. 29-15-8w.
Rig.

Pryor & Lockhart's No. 1 Gregory, SE SE SE Sec. 19-16-8w.
Drlg. 1,545 ft.

HARVEY COUNTY

O. J. Connell et al's No. 1 Roth, SW cor. Sec. 16-22-2w.
Spudded and S.D.

Wenzel et al's No. 1 Schrag, NW SE Sec. 24-22-3w.
T.D. 587 ft.; S.D. for csg.

MARION COUNTY

Youker et al's No. 1 Bernhardt, C SE NW Sec. 7-18-4.
Drlg. 1,925 ft.

McPHERSON COUNTY

Brosius et al's No. 1 Hanson, NE NE SW Sec. 15-17-2w
T.D. 1,108 ft.; fishing.

Carey & Miller's No. 1 Husband, SE SE NW Sec. 6-19-3w.
Moving in material.

Johnson & Carey et al's No. 1 Dyck, SE NE SE Sec. 35-22-5w.
Siliceous lime 4,064-70 ft.; H.F.W.

Lario O. & G. Co. et al's No. 1 Schreg, NW SE SW Sec. 22-19-4w.
Siliceous lime 3,880-89 ft., T.D.; dry and abd.

Lario O. & G. Co.'s No. 1 Base, SW cor. Sec. 22-20-2w.
Wilcox 3,495 ft.; H.F.W. 3,505-10 ft., T.D.; fishing.

Palmer Oil Corp.'s No. 1 Swenson, NE NE SW Sec. 11-18-3w.
T.D. 1,330 ft.; U.R. 13-in. csg.

L. W. Prunty et al's No. 1 Davis, NE cor. Sec. 6-22-1w.
Chat 2,922 ft.; drlg. 2,928 ft.

Shell Pet. Corp.'s No. 1 Wenger, NE cor. Sec. 2-20-1w.
Drlg. 2,628 ft.

Stafford et al's No. 1 Krehbiel, NW NW SE Sec. 27-21-3w; (O.W.D.D.).
C.O. at 2,030 ft.

NESS COUNTY

Texas Co. and Gypsy Oil Co.'s No. 1 Goodman, C SW SW Sec. 21-19-23w.
Drlg. 4,886 ft.

Phillips Pet. Co.'s No. 1 Young, C NW SW Sec. 13-18-21w.
Set 13-in. csg. 1,450 ft.; T.D. 1,500 ft.

RENO COUNTY

Bradley's No. 1 Olmsted, SW SW SW Sec. 22-22-7w.
Moving in material.

Foraker et al's No. 1 Hiett, SE SW NE Sec. 34-24-4w.
T.D. 1,285 ft.; S.D.

Kessler, Their and Skelly's No. 1 Bigger, NE SE SW Sec. 29-23-6w.
Siliceous 4,141-50 ft.; dry and abd.

Privett Drlg. Co.'s No. 1 Crotts, NE NW NE Sec. 27-26-10w.
Set 6-in. 3,741 ft.; drlg. 3,800 ft.

RICE COUNTY

Allison & Fitzwilliams et al's No. 1 Stumps, NW NW SW Sec. 4-18-10w.
8-in. csg. 2,865 ft.; T.D.

Bradley's No. 1 Olmstead, SW SW SW Sec. 22-22-7w.
Moving in material.

Day et al's No. 1 Mason, NW NE NE Sec. 28-21-7w.
Rig.

Day's No. 1 Mason, NW NE NE Sec. 28-21-7w.
Moving in material.

Foraker, Nickerson et al's No. 1 Lyons, SE NW Sec. 27-20-8w.
T.D. 2,689 ft.; U.R. 8-in. csg.

Gypsy Oil Co.'s No. 1 Koesling, NW NW SW Sec. 10-20-9w.
Set 5-in. csg. 3,240 ft.

Langston et al's No. 1 Markle, NE NE SW Sec. 1-20-9w.
Conglomerate 3,235 ft.; drlg. 3,266 ft.

Marathon Oil Co.'s No. 1 Grove, SE NE NW Sec. 29-19-9w.
Location.

Vickers Pet. Co. et al's No. 1 Gouldner, SE NE NW Sec. 16-18-9w.
15-in. csg. 135 ft.; drlg. 440 ft.

ROOKS COUNTY

Carman & Hershey's No. 1 Nelson, NW NW NE Sec. 27-10-16w.
Rig.

Carman & Hershey's No. 1 Nelson, NW NW NE Sec. 27-10-16w.
Rig.

Stearns & Streeter's No. 1 Hoskins, SE SW SE Sec. 34-9-16w.
Acidized; pumped 120 bbls. oil from Oswald lime 3,084-3,106 ft.

Trees Oil Co. and Findeiss' No. 1 Johnson, SW SW SE Sec. 26-10-19w.
Rig.

RUSH COUNTY

Lario O. & G. Co. and Phillips Pet. Co.'s No. 1 Benbow, NW NE NE Sec. 12-17-19w
K.C. lime 3,418 ft.; wtr. at 3,460-70 ft.; U.R. 6-in. csg.

Morgan & Flynn's No. 1 Schlegel, SE SE NW Sec. 26-17-16w.
Spudded.

RUSSELL COUNTY

J. Brouk and R. D. Bailey's No. 1 Kluesner, NW SE Sec. 34-15-12w.
Rigged up.

Hartman & Blair's No. 1 Furthemyer, NE cor. Sec. 1-14-14w.
Small show of oil 3,009-19 ft.; T.D.; U.R. 6-in. csg.

Hartman & Blair's No. 1 Garrett, SW SW NW Sec. 24-13-12w.
Moving in material.

Hartman & Blair's No. 1 Krause, NE NW NW Sec. 5-15-15w.
Oswald and 6-in. csg. at 3,171 ft.; drlg. 3,204 ft.

Hartman & Blair's No. 1 Hildebrandt, NW NE SW Sec. 12-14-14w.
Rigging up.

Lario O. & G. Co. et al's No. 1 Nuss, NW SW SW Sec. 11-14-14w.
Moving in material.

Murphin et al's No. 1 Funk, SW cor. Sec. 19-12-13w.
Drlg. 1,320 ft.

Vernon & Murphin's No. 1 Becker, NE cor. Sec. 32-15-13w.
Rig.

Wolf Creek Oil Co.'s No. 1 Kraft, SW cor. Sec. 26-16-11w.
T.D. 735 ft.; running 12-in. csg.

Flood Waters and Impassable Roads Continue to Retard Activity in the Lower Eastern Fields

By STAFF CORRESPONDENT

PITTSBURGH, Pa., Mar. 18.—Progress was made in the tests drilling to the Oriskany sand in Kanawha County, West Virginia. The test of the Clyde Oil & Gas Co. on the F. W. Shinn farm in Elk district made some hole after passing the tools lost. The depth is now 3,810 feet. This test is being watched with interest as it is about 1,000 feet east of the producer on the W. L. Burdette farm. Tests both due north and south were dry. The Yoak Oil & Gas Co. has reached a depth of 2,200 feet in the test on the W. T. and J. H. Goshorn farm. Benedum & Trees are drilling at 1,970 feet in the test on the Mary C. Wingfield farm. In Jefferson district, these operators are down 450 feet in a test on the Joseph Hill farm.

The test on the W. T. Copen heirs farm in Elk district, the log of which has been previously reported, was given an acid shot in an endeavor to improve the gas showing. About 605 gallons of acid were used packed with 135 bbls. of oil from their Burdette Oriskany producer. The test shows no oil and the gas increased from 12,000 feet a day to about 60,000 feet a day, the oil used being recovered with the bailer. The 5-inch casing will be pulled and the gas used locally. This test is on Coopers Creek about 2,000 feet north of their Burdette producer. The total depth remains 5,043 feet and through the Oriskany.

Flood stage waters and impassible local roads continue to retard drilling progress in all districts of the lower eastern fields. During the past week only eight wells were completed, one being a small producer of 10 bbls. a day initial, and the remainder gas wells of which one was a fair test.

In Southeast Ohio there were only two wells reported. The producer was the test of Mary Wickens and others on the William Davidson farm on the Macksburg Ridge in Section 30, Aurelius Township, Washington County. It was completed in the Maxon sand at a depth of 1,027 feet and is showing 10 bbls. a day, natural.

In Meigs County the Ohio Fuel Gas Co. completed a test on the Earl Winters farm, Lot 1,195, Lebanon Township, in the Berea sand at a depth of 1,940 feet. It is a gas well with an initial volume of about 300,000 feet a day.

SOUTHWEST PENNSYLVANIA

The test on the Chestnut Ridge anticline on the Summit Hotel property in South Union Township, Fayette County, is being spudded by William Snee and others. It is located about 700 feet down the west flank from the hotel in the rough near the No. 1 hole on the golf course. A double steel rig is being used and the test is scheduled for the deep sand of the lower Devonian (Oriskany) and possibly the Silurian series. Paul A. Witherspoon is the contractor in charge.

One well was completed in the Southwest Pennsylvania Field during the past week. In Whiteley Township, Greene County, the Carnegie Natural Gas Co. completed drilling deeper their No. 2 on the George W. Gordon farm with a resulting fair gas well. The Pittsburgh Coal in this well was at 814 feet with the top of the Bayard sand at 3,240 feet. Gas was found at 3,241-44 feet, having a volume of about 786,000 feet a day.

In Richhill Township of this county, Lewis & Co. are again shut down in their test on the Samuel Chess farm with a fishing job at 1,022 feet. Johnson & Eddy remain shut down in the No. 2 on the W. L. B. Roberts farm at a depth of 1,525 feet.

In Amwell Township, Washington County, the Carnegie Natural Gas Co. reached the top of the Fifth sand in the second test on the M. Manon farm at a depth of 2,949 feet, and is drilling at 2,952 feet with no showing at that depth. On the Ella S. and A. L. Johns farm the Union Gasoline & Oil Corp. reached a depth of 2,015 feet and shut down testing the 6⅝-inch casing.

In East Findley Township, Washington County, the Natural Gas Co. of West Virginia is drilling a test on the P. I. Ealy farm. The top of Pittsburg Coal was at 915 feet with the Little Dunkard sand extending from 1,239 to 1,265 feet. At 1,240 feet there was a showing of about 400,000 feet of gas a day. The depth is now 1,350 feet. A rig for their test on the T. C. Noble farm is being completed.

In West Bethlehem Township, Washington County, Furman Nuss & Co. are down 1,250 feet in a test on the Margaret Keys farm. The Pittsburgh Coal was at 829 feet. In North Franklin Township, E. H. and J. B. Tague have started spudding in No. 13 on the Adaline D. McKennan estate which continues their Dunkard sand streak.

In Cecil Township, Washington County, Amon & Kaufman have rigged up for a test on the Mrs. M. Winters farm about 3,000 feet northwest of their fair No. 1 producer on the Thomas Weaver farm. Paul Clay and others have rigged up for the test on the Mrs. W. J. Johnston farm.

WEST VIRGINIA

No new oil producers were completed in West Virginia during the week, all of the completions being gas wells. Some reconditioning work has been done notably in Roane County, where the Heck Oil Co. cleaned out several wells. On Sugar Camp Run in Reedy district this company cleaned out and shot their No. 9 on the Enoch heirs farm in the Salt sand and increased production from 2 to 15 bbls. a day. Their No. 3 on this farm was also improved by the same treatment from 3 to 12 bbls. a day. On the H. W. Allen farm this company increased from 5 to 15 bbls. a day in the test. All are located in the same district.

Gas Wells

The best gas well for the week in West Virginia was the test of Kenny M. Hunt and others on the T. J. Murray farm on Mill Creek in Curtis district, Roane County. It was drilled in the Salt sand at a depth of 1,635 feet and has a showing of over 2,000,000 feet a day. It is located about three-quarters of a mile north of the test on the L. M. Riddle farm.

In Calhoun County, A. Rothwell completed a test on the J. H. Sturms farm in Sherman district in the Injun sand at a depth of 2,295 feet. It is a gas well gauging about 125,000 feet a day along with 1½ bbls. of oil. In Lee district, McIntosh & Grimm completed a test on the W. E. Stump farm in the Injun sand at a depth of 2,610 feet. The Berea was dry but it will make a small gas well in the Injun sand.

In Ritchie County, on Leatherbark Creek in Murphy district, Clem S. Morris completed a test on the W. E. Cox farm in the Injun sand at a depth of 1,844 feet and it is a gas well with an initial volume of 500,000 feet a day. One mile east of Ellenboro in Clay district, H. H. Gainer completed a test on the Frederick L. Lambert farm in the Big Injun sand at a depth of 1,875 feet as a small gas well.

Drilling in West Virginia

In Boone County, Pure Oil Co. has reached 2,259 feet in No. 3 on the A. M. Prichard lease in Sherman district. In this district, the Owens Illinois Glass Co. is down 2,130 feet in No. 23 on the Peytonia Coal Land Co. lease.

In Cabell County, Boyles & Gardner are spudding in the test on the Edward Owens farm in McComas district. In this district the Fairfax Gas Co. is rigging up the second test on the Leonard Paugh farm and R. H. Adkins and others have reached a depth of 1,200 feet in the test on the Golden Creamens farm.

In Calhoun County few operations are active. C. B. Lewis and others are fishing for the tools in the test on the M. J. Kight farm in Sherman district and at a depth of 980 feet. Boyce Fowler and others are shut down testing at 1,580 feet on the Lowman Fowler farm No. 1. Dudley Lutz and others have the rig completed for the test on the Elias Yoak farm. In Center district, Starcher & Richards have the material on the ground for a test on the R. Paul Ritchea farm.

In Clay County, Benedum & Trees are drilling at a depth of 1,810 feet in a test on the L. E. Rogers farm in Otter district. In Pleasant district F. F. McIntosh has reached 1,030 feet in the second test on the Peabody Coal Co. tract.

In Gilmer County only one well is drilling. The Steer Creek Oil & Gas Co. has reached a depth of 1,120 feet in the No. 8 on the C. D. Mollahan farm in Center district.

In Kanawha County, Godfrey L. Cabot, Inc., has reached 3,100 feet in No. 52 on the Arabella D. Huntington lease in Cabin Creek district and 2,119 feet in No. 51 with roads completed to the locations for the Nos. 49 and 50. In Big Sandy district, J. B. Weir is drilling a test on the Falling Rock Coal Co. lease. In Washington district the Harvard Gas Co. is shut down for wire line at 2,900 feet in the test on the William Compton farm.

In Logan County, Cumberland Petroleum Co. is rigging up for No. 10 on the Merrill Coal Co. tract in Chapmansville district. In Logan district, the West Virginia Gas Co. is down 1,750 feet in No. 38 on the Dingess Roal Coal Co. tract.

In Marion County Monroe & Laughlin are drilling at 3,170 feet in No. 3 on the A. D. Wells farm in Mannington district. J. J. Allen and others have abandoned the location for a test on the James A. Hough farm, same district.

In Marshall County, Samuel Morrison and others have a drilling machine on location for a test on the Ambrose Ferris farm in Clay district. In Mingo County, F. H. Yates has resumed drilling the test on his own farm in Harvey district and has reached a depth of 1,571 feet.

In Pleasants County, the Ritchieville Oil & Gas Co. has spudded in and started drilling a second test on the P. F. Matheney farm on Limestone Run in Jefferson district. It is located about 300 feet north of No. 1.

In Raleigh County, Godfrey L. Cabot, Inc., is drilling two wells on the Beaver Coal Co. property in Slab Fork district. No. 6 has reached a depth of 2,450 feet and No. 7 is down 2,690 feet.

In Ritchie County, Cottrill & Co. has made a location for a test on the Emma Wince farm in Clay district. Lucas & Mahaney are down 300 feet in No. 5 on the J. H. and Laura Kelley farm. Smith & Hendershot have started drilling No. 4 on the Charles Wilcox, Sr. farm. Rinehart and others went to a depth of 3,050 feet in a test on the A. J. Glass farm and shut down. In Murphy district, the Southern Oil Co. has made a location for No. 14 on the Alvin Wince farm. William Morris and others reached 1,870 feet in a test on the Nellie Snyder farm and shut down. In this district, W. R. Hays is drilling at 500 feet on the Levi Wilson farm, a test, and C. S. Morris at 800 feet on the H. B. Ayers farm, also a test. Shannon Dawson is down 700 feet in a test on the E. C. Dawson farm. In Grant district, Joseph Elder and others are down 1,200 feet in a test on the Isaac M. Jackson farm. Ralph Jackson has started drilling the test on the S. and E. L. Tennat farm.

In Roane County, on Clarkson Fork of Rush Run of Henrys Fork, Smithfield

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Administrator's Report on Crude Stocks

WASHINGTON, D. C., Mar. 18.—Stocks of domestic and foreign crude petroleum at the close of the week ended March 9 totaled 322,048,000 bbls., according to data compiled by the Bureau of Mines, Department of the Interior, for Petroleum Administrator Harold L. Ickes. In comparison with the data for the previous week, this total represents a net decline of 1,527,000 bbls., comprising decreases of 1,432,000 and 95,000 bbls., respectively, in stocks of domestic and foreign crude petroleum.

Current reports of the industry indicate that daily average crude oil production for the week ended March 9 was approximately 2,585,000 bbls., or about 40,000 bbls. above the average of the previous week. Production in Texas and Oklahoma remained virtually unchanged but the daily average in California increased from about 466,000 to 523,000 bbls. Daily average imports were 53,000 bbls., or 80,000 bbls. below the revised figure of the previous week. Daily average crude runs to stills failed to show the usual early-month increase, the average of 2,410,000 bbls. being about 35,000 bbls. under the average for the week ended March 2.

STOCKS OF CRUDE PETROLEUM, MARCH 2 AND MARCH 9, 1935
(Barrels of 42 gallons)

	Mar. 2, 1935	Mar. 9, 1935
Grade of crude oil—		
Pennsylvania Grade.	4,406,000	4,375,000
Other Appalachian..	990,000	910,000
Lima, N. E. Ind.-Mich.	1,198,000	1,181,000
Ill.-S. W. Ind.	11,490,000	11,531,000
N. La. and Ark.	9,540,000	9,542,000
W. Tex. and S. E. N. Mex.	30,923,000	30,454,000
East Texas	30,370,000	30,062,000
Other Mid-Continent	148,384,000	148,076,000
Gulf Coast	20,027,000	20,248,000
Rocky Mountain	27,651,000	27,646,000
California	35,069,000	34,589,000
Domestic crude	320,048,000	318,616,000
Foreign crude	3,527,000	3,432,000
Total*	323,575,000	322,048,000

*Represents approximately 98 per cent of total stocks in the United States, exclusive of producers' stocks.

Floods and Broken Roads Slow Up Drilling Work and Halt Completions in the Michigan Fields

By PAUL A. ELLIOTT
Staff Correspondent, Michigan Fields

MUSKEGON, Mich., Mar. 18.—Floods and the annual spring breakup of gravel roads, caused by seasonal thawing of ice and snow and frost leaving the ground, seriously delayed drilling operations in all Michigan fields last week with the result only five new completions were recorded, including three small oil wells and two dry holes.

One important wildcat extension, a 250-bbl. Dundee producer, and two other smaller wells, all in Ogemaw County, comprised the oil completions, while both "dusters" were on wildcat or semiwildcat locations in Isabella County. In addition to the new oil wells, acid treatment of a well previously drilled into the Dundee pay sands in the Porter Township, Midland County, Pool, increased its production from 70 bbls. initial to about 300 bbls., or an addition of 230 bbls. a day for a state total of about 600 bbls.

Operators were watching developments in two important tests, one in the new Beaverton Township, Gladwin County Pool and the other in Crystal Township, Montcalm County.

Ogemaw Completions

The most important new development of the week was the completion of C. F. Patterson and O. F. Louis' No. 1 William J. Price, SW SW SE Section 31-22n-3e, Churchill Township, Ogemaw County, as an estimated 250-bbl. producer in the Dundee formation. After topping the Dundee limestone at 2,462 feet, this well came in at 2,626½ feet making several flows and pumping 20 bbls. during the first hour.

The new well is located due north of several producers in Section 6, Mills Township, but is considered of greater importance because of its initial flow compared with 50 to 100-bbl. wells previously encountered in several Ogemaw County areas. Its successful completion has increased an already growing interest in Ogemaw drilling operations as well as crude purchase with the result a considerable increase in development activity and possibly an increase in the crude price is anticipated. Ogemaw crude has been posted at 86 cents a barrel compared with $1.02 paid for the output of other Michigan fields.

Thompson Brothers, who have started their No. 1 William Price, NW SW NE Section 31, in the same township, predict Ogemaw County will be the "hot spot" in Michigan during coming weeks and months.

Mills-Ogemaw

Melling Oil & Gas Co. also completed No. 1 State of Michigan (formerly No. 2 State), NE SE NW Section 6-21n-3e, Mills Township, for an unexpected initial flow of 70 bbls. of oil daily and about 1,000,000 feet of gas in the upper Travis formation. The well was started in January and had been drilled to 400 feet before it was discovered to be on the adjoining Wobig heirs lease. The rig was skidded and the present hole started in February.

Two other tests have been started in the same section, namely, R. L. Hill's No. 1 Ella Jaque, SE NE SW Section 6, drilling at more than 300 feet, and Paul R. Cash, trustee's No. 2 Wobig heirs, NW SW NE Section 6, shut down at 900 feet.

Ogemaw Township and County

A third small producer was completed by the Muskegon Oil Corp. on its No. 2 Harriet Wilson, NE SE NE Section 24-22n-1e, Ogemaw Township, estimated good for 40 bbls. a day before acid treatment. Dundee was topped at 2,615 feet.

Three other Ogemaw Township tests were active, including M. J. Ingold's No. 1 Grover Zettle, SW SW SW Section 13, fishing for a string of tools below 2,000 feet and two new projects just starting, namely, the Prudential Oil & Gas Corp.'s No. 1 Walter and Paul Gussman, SE NE SE Section 24, and J. W. Leonard, Jr., and others on the No. 1 Joseph and Katherine Heintz, SW NE NE Section 24.

West Branch—Ogemaw

Weber Oil Co.'s No. 1 Victor Nelson, SW SW SW Section 26-22n-2e, West Branch Township, was being completed in the Dundee. A. R. Nelson, trustee's No. 1 Victor Nelson, NE NE SE Section 33, same township, was the deepest of four other drilling wells in the township, operating at more than 2,350 feet and anticipating early completion. Two others were shut down and four were starting in the township where greatest Ogemaw activity has been centered for many months. Drilling was expected to be started about April 1 on a wildcat in Rose Township, Ogemaw County.

Isabella County

Two dry holes were recorded in Isabella County, one a deep test in Fremont Township and the other in the shallow Michigan Stray sand in Sherman Township.

Pure Oil Co.'s No. 1 Lucy Baker, SW SW SE Section 15-13n-5w, Fremont Township, Isabella County, known as the Winn test because of its proximity to the village of Winn, struck black water in the Monroe formation at about 4,200 feet and was to be plugged and abandoned as a "duster." The Baker had a promising show of oil and gas in the upper Traverse at about 3,100 feet but was unsuccessful in the Dundee.

The Hal-Be-Oyle & Gas Co.'s No. 1 O. D. Leiter, SE NE SW Section 33-15n-6w, Sherman Township, Isabella County, was unsuccessful in the search for gas in the Michigan Stray sands drilling to a total depth of 1,355 feet where it was to be plugged and abandoned.

Two other Sherman Township tests were shut down, the Youmans-Dalton Oil & Gas Co.'s No. 1 Charles Wheelock, C SW NE Section 31, at about 900 feet, or not far above the Michigan sands, and the Sherman Drilling Co.'s No. 2 George Carrothers, C S half SW Section 32, at about 300 feet. Two other tests were starting, one in Section 31 and the other in Section 36 of the same township.

An interesting new wildcat test was announced by W. J. Bernier for Section 22-15n-5w, Nottawa Township, on the Weber lease, where a rig was being moved in. A Rolland Township wildcat was shut down at 375 feet. One test was drilling at more than 500 feet in Section 25-16n-4w, Vernon Township, with two others in Section 31, same township, shut down, one below and the other above the Michigan Stray sands.

Isabella Township and County

Four tests were active in Isabella Township and county with Brehm & Bond's No. 1 William West Syndicate, SE NE NE Section 25-15n-4w, drilling nearest the Dundee pay sands at more than 3,300 feet. One other was drilling at about 2,000 feet and two new tests were starting.

Denver—Isabella

Nine tests were active in Denver Township, Isabella County in addition to two shut down. Deepest of two drilling wells was J. W. Leonard, Jr., and others' No. 2 Stanley Demski, SW SE SE Section 28-15n-3w, drilling at more than 3,000 feet. McClanahan Oil Co.'s No. 1 B. Wonsey in Section 33 was still fishing for casing while seven others were moving in, rigging or driving pipe as new starts.

Chippewa—Isabella

Two Chippewa Oil & Gas Co. tests were nearing the Michigan Stray sands with probable completion this week after some delay due to weather. The No. 1 Carl Rhode, C SW NE Section 15-14n-6w, was drilling below 1,200 feet and the No. 1 Mrs. Diehl, C NE SE, also Section 15, was about 1,100 feet deep.

Arbaugh Brothers' No. 1 Ray Aldrich, C NE SE Section 22, was still shut down at 1,047 feet, while two others were rigging and spudding, respectively, in Section 14.

Midland County

Daily production of Charles W. Teater's No. 2 Joseph M. Wale, NE NW NW Section 22-13n-1w, Porter Township, Midland County, was increased from an initial of 70 to about 300 bbls. a day after acid treatment in the Dundee topped at 3,363 feet and drilled to 3,402 feet about two weeks before.

Fred M. Turner and others' No. 3 C. L. Baxter, SE NE NE Section 22, was nearest the Dundee of eight drilling wells in Porter Township at about 3,000 feet. One test was shut down and 10 others moving in, rigging up, spudding or driving pipe.

Two Greendale Township, Midland County, tests were drilling but not near production, one spudding and a fourth shut down.

Midland County Wildcats

Three Midland County wildcat tests were active, one drilling in the Monroe in Ingersoll Township, and the other two drilling at lesser depths in Mount Haley and Mills Township, while two other tests were active in other Midland County proved territory in Lee and Jasper Township.

Nearest completion of the five was Howard F. Patterson's No. 1 David Haskins, NW NW SW Section 25-13n-2e, Ingersoll Township, drilling in the Monroe.

Montcalm County

J. W. Leonard, Jr., and others' No. 1 Otto and Goldie Durbin, NW NW NE Section 11-10n-5w, Crystal Township, was drilling into the Dundee after setting casing at 3,150 feet on a wildcat located several miles southeast of present production in Montcalm County.

Two other Montcalm tests were drilling, one in Montcalm County below 1,100 feet and the other in Home Township at a lesser depth. A rig was up for a new Day Township test and a new location for Belvidere Township. Two others in Pierson and Richland Townships, respectively, were still shut down.

No Mecosta County tests were nearing completion with five shut down, two in Sheridan Township, one in Millbrook and one in Aetna. Two were drilling, one in Hinton Township and the other in Martiny, two were locations in Hinton and Millbrook and two were starting in Millbrook and Sheridan.

Gladwin County

The first test of the Dundee in the Gladwin County area was expected this week with the Roosevelt Oil Co.'s No.

Indiana Leads Central West Completions; Seven in Central Ohio, 3 in Kentucky

By GEORGE A. WHITNEY
Staff Correspondent, Central West Fields

FINDLAY, Ohio, Mar. 18.—In the old Lima Field, northwestern Ohio, Bosse Brothers' test on the Adam Gamber farm, Section 23, Salem Township, Wyandot County, was dry at 1,277 feet. Same parties have a rig on the Isaac Stansberry farm, Section 28, same township. Murphy and others are drilling No. 2 on the Hakes & Fox farm, Section 5, Tymochtee Township. In Pitt Township, Newcomer and others are drilling on the Hiram Stalter farm, Section 22.

In Seneca County, Tiffin Independent Gas Co. is drilling No. 2 Charles H. Feasel farm, Section 32, Liberty Township, and R. E. Greene is drilling No. 3 T. C. and B. G. Schaull farm, Section 30, same township. J. L. Barrett is drilling No. 1 T. N. Einsel farm, Section 1, Hopewell Township.

In Hardin County, Kenton Oil & Gas Co. has a rig for No. 3 on the William J. McMahon farm, Section 17, Pleasants Township.

In Marion County Claridon Oil Co. is reported around 2,730 feet in No. 1 on the H. C. Barnhardt farm, Section 11, Claridon Township.

In Allen County, in the Lima Field, L. J. Pease and L. J. Pease, trustee, are drilling No. 5 Nancy E. Leedy farm, Section 14, Bath Township.

Simms Oil & Gas Co. is reported working on No. 2 on the Aetna Life Insurance Co.'s farm, in Buck Township, Hardin County. Bert Sheldon has a rig for No. 2 on the Ora E. Rush farm, Section 31, Blanchard Township.

KENTUCKY

Three completions were reported from Kentucky, all in Ohio County. Cumberland Petroleum Co.'s No. 13 on the Sidney Lancaster farm, in the Oak Pool, had an initial of 90 bbls. Same company and others' No. 4 Guy Richards farm, in the Oak Station Pool, produced an initial of 8 bbls. and same company's No. 14 Rolly Richards farm, same pool, produced an initial of 50 bbls.

CENTRAL OHIO

In the Central Ohio Field seven completions were reported, three gas wells, three dry holes, and one oil well. East Ohio Gas Co.'s No. 4 on the Joseph and Retta Cadd farm, Section 1, Wheeling Township, Guernsey County, showed an

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1 Arnold Haviland, SE NE SE Section 4-17n-2w, Beaverton Township, nearing the Dundee on a location less than 2 miles northwest of the discovery well. It was reported drilling below 3,800 feet with the casing point anticipated at about 3,850 feet.

M. F. Whitehill's No. 1 Kintner, the discovery well in Section 11, was expected to be treated with acid, while Mr. Whitehill's No. 1 Spicer was to be spudded in soon in Section 11.

Two other tests in the area, the Sun Oil Co.'s No. 1 Mary A. Hines, Section 31, and the Beaverton Oil & Gas Co.'s No. 1 Mrs. Ross, Section 7, also were getting under way. The Sun Oil also was moving in for the No. 1 Becker, C SE SE Section 2-18n-1w, Arthur Township, Clare County, a test expected to have some bearing on future development in the Gladwin area.

Howard L. Foster and J. V. Wicklund's No. 1 Carrie Neal, SE NE SE Section 13-16n-2w, Warren Township, Midland County, another important test in the other direction, was drilling below 3,000 feet in the upper Traverse formation.

McClanahan Oil Co.'s No. 1 Allen G. Heath, C NW SW Section 31-19n-3e, Adams Township, Arenac County, a wildcat test just east of the Gladwin County line, had more than 400 feet of hole.

General Wildcats

Talbot Oil Co. and others' No. 1 McPherson estate, NE NE NW Section 35-3n-4e, a Howell Township, Livingston County wildcat, drilled through the Trenton limestone last week without success but will be continued to the St. Peters sand. The test, which has reached 5,885 feet as one of the deepest tests in the state, logged more than 1,000 feet of Trenton lime with light gas showings at two levels. One other deep test in Genoa Township, Livingston County, is assembling heavier equipment to test the Trenton.

C. M. Holly's No. 1 Thom, SW NE NE Section 9-8n-9e, Oregon Township, Lapeer County, was dry in the Berea at 1,421 feet, but may be deepened. One other test was drilling in the same township and a third Lapeer County test was listed but uncompleted in Section 28, Mayfield Township.

No important new developments were reported in western Michigan with two wildcats, one in Mason and the other in Manistee County, still uncompleted though just above the upper Traverse and Dundee, respectively. Four tests were active in proved fields, two in Muskegon County and two in Oceana but not nearing completion.

Other wildcat operations include tests in Alcona Township, Alcona County; Duplain Township, Clinton County; Fulton Township, Gratiot County; Grant Township, Huron County; Drummond Township, Chippewa County; Chapin and Tittabawassee Townships, Saginaw County; Grant Township, St. Clair County; Lockport Township, St. Joseph County; Rush and Vernon Townships, Shiawassee County, and Haring Township, Wexford County, many of which were shut down due to weather or other conditions.

New Locations

Four new permits were issued by the state conservation department, one in the proved Chippewa Township Pool of Isabella County, two on wildcat locations in Nottawa Township, Isabella County, and Winfield Township, Montcalm County, and one in the proved Broomfield Township, Isabella County, gas area.

The two wildcats are: W. J. Bernier's No. 1 Jacob Weber, NW NW NW Section 22-15n-5w, Nottawa-Isabella, and L. G. Thompson and others' No. 1 J. K. Knapp, E half SE NE Section 17-12n-9w, Winfield-Montcalm.

The other two are Karl K. Leibrand, trustee's No. 1 Shaffer, NE NW NE Section 10-14n-3w, Chippewa-Isabella and W. J. Bernier's No. 1 Leo Gatehouse, C NE NE Section 2-14n-6w, Broomfield-Isabella.

Union-Freehold's Test in Turner Valley May Be Important Field Extension

By VICTOR LAURISTON
Staff Correspondent, Canadian Fields

CHATHAM, Ontario, Mar. 16.—Deliveries from the Turner Valley Field to the Calgary refineries in February totaled 77,492 bbls., compared with 80,734 bbls. in January and 83,718 bbls. in December, the drop being due to the short month. The daily average was 2,767 bbls. in February against 2,604 bbls. in January. In February Imperial Oil Refineries reported receipts of 5,776 bbls. of clear naphtha, 60,746 bbls. of discolored naphtha and 2,343 bbls. of crude oil compared with 6,123 bbls. of clear naphtha, 64,893 bbls. of discolored naphtha and 1,946 bbls. of light crude in January. Receipts of the Bell Refining Co. in February were 8,626 bbls. against 7,772 bbls. in January.

Turner Valley Field

The most interesting test in South Turner Valley is Union-Freehold Oil Corp.'s No. 1, LSD 8, Section 21-18-2w5. Approximately a half mile south of the nearest producer, Highwood-Sarcee Oils' No. 1 in LSD 16 of the same section, Union Freehold's No. 1 is drilling below 5,420 feet, and approximately 100 feet in the brown sand of the Dalhousie formation. The sand was encountered at 5,322 feet, and 8-inch casing was cemented at 5,326 feet. Some 40 feet of core showed fairly heavy oil saturation. Highwood-Sarcee's No. 1 was in the same light crude horizon around 5,046 feet and got the lime at 5,352 feet, indicating that Union-Freehold's No. 1 should get the lime a little above 5,700 feet. It is logging higher than some of the producers recently completed in Section 28-18-2w5, to the north and west, indicating that it is not merely on structure but near the crest, and likely to prove an important extension of the field. In the same section, Northwest Royalties' No. 1, LSD 5, on the west side, is below 2,600 feet.

Farther north, in Section 28-18-2w5, Publix Oil & Gas Co.'s No. 1, LSD 8, is below 300 feet in the lime at 5,260 feet. It got good shows of wet gas and naphtha in the top of the lime around 5,015 feet but has not reached the main porous horizon. British Dominion Oil & Development Corp.'s No. 4, LSD 6, has finished a fishing job in the Home sand and is deepening below 5,270 feet. It has some gas in the top of the Home sand.

In the same section, Renfrew Royalties' No. 1 Morris and Goodfellow, LSD 3, is preparing to run 10-inch casing to 4,410 feet. Pacalta Oils' No. 1, LSD 7, is testing production from the lime at 5,498 feet. It looks like a fair producer. Spooner Oils' No. 5 Anaconda, LSD 1, is testing production from the lime at 6,305 feet, and may do 50 to 60 bbls. or better.

North Turner Valley

In North Turner Valley, Royalite Oil Co.'s No. 26, LSD 5, Section 23-20-3w5, is below 3,763 feet. Farther south and west, Red Phillips' No. 1, LSD 16, Section 16-20-3w5, has resumed and is below 500 feet. Location of this test, spudded last fall and standing for some weeks at 55 feet, is not on the Turner Valley structure, but on a minor fold between the field and Black Diamond.

Tests in the Foothills

On the Highwood-Sinclair structure, south of Turner Valley, Canadian Royalties' No. 1 Banner, LSD 6, Section 34-17-3w5, is standing at 1,018 feet waiting for casing. The bailer has brought up considerable 45 degree paraffin base oil, apparently seeping into the hole from the McDougall-Segur sand around 905 feet. It is expected to get the potential light crude horizon of the Dalhousie sand around 1,600 feet and the lime around 2,000 feet.

On the Watson structure north of Lundbreck, Mar Jon Oil Co.'s No. 3, LSD 3, Section 4-10-2w5, is below 750 feet after a shutdown due to frozen water supply. Mar Jon-Maxmont's No. 4, LSD 10, Section 20-9-2w5, is below 1,800 feet and underreaming. Raven Oils' No. 1, LSD 1, Section 20-9-2w5, is standing cemented at 1,225 feet.

In the Aldersyde area, west and north of Ranchmen's Gas & Oil Co.'s No. 1, considerable interest was shown in the government offering of acreage in an area northwest of the Twin Dome structure and east of the old Anglesey Lakeview's No. 1 location near De Winton. Some of the acreage was taken by the Canadian Western Natural Gas, Light, Heat & Power Co. and some by E. B. Taylor and associates and J. Littleton. Interest is due to the proximity of Ranchmen's No. 1, which is preparing to deepen into an oil sand from 6,265 feet; and to shows secured in Anglesey-Lakeview's No. 1, LSD 1, Section 22-21-1w5. This well, drilled about 1928, reported a fair oil show at 1,390 feet and gas shows at 3,251, 3,887 and 4,247 feet. Post-Benton formations continued to 4,500 feet, where drilling was discontinued, and the drill did not penetrate the typical formations of the Turner Valley Field.

Border Fields

In the Alberta end of the international Red Coulee Field, Vanalta's No. 7, LSD 3, Section 4-1-16w4, is rigging. O. R. Lang has the contract. Location is close to the Vanalta producers, and test should spud this month.

On the Cardston structure, Franco Oils' No. 1, LSD 6, Section 5-3-25w4, is in the Blood Reserve sands below 2,100 feet, after setting casing at 2,065 feet. It got nine shows of gas and two small shows of crude oil, there being sufficient gas to light above the 13-inch casing.

On the Del Bonita structure, northwest of the Cut Bank Field, Terminal Oil Co. of Los Angeles is hauling fuel oil and putting the outfit in shape to resume drilling of No. 1, NE Section 18-1-21w4. The test spudded last fall and has been standing through the winter at 318 feet.

Meeting of Oil Men

Southern Alberta oil prospects were discussed by Dr. Robin Willis, geologist, at a meeting of independent oil operators recently at Calgary. He pointed out that much of the Alberta plains area has an excessively low regional dip, and oil accumulation may depend on other factors besides structure, making prospecting more hazardous. In the area extending from the Montana border northward between Red Coulee and Del Bonita to Lethbridge and beyond, the dips are more pronounced, averaging 2 to 5 degrees, whereas half a degree is sufficient for migration. This, with known continuity of productive formations and definite evidence of anticlinal trends and the presence of closed structures, makes this region peculiarly favorable provided means can be found to map the structures under the drift. Failure of isolated tests is due primarily to lack of adequate surface exposures; though offset of the subsurface from under the surface axis, a characteristic of folds of this type, is partly responsible.

In the foothills the heavily bedded competent limestone has behaved differently from the overlying thin-bedded rocks during the folding and faulting of the region, thus increasing the difficulty of locating the limestone folds. Knowledge of foothills structure has increased with drilling. Only a small percentage of the Alberta areas can be definitely condemned on the strength of the limited drilling already done. While large production may not be anticipated, the crude oil fields of the southern plains should show a more profitable ratio of production than the Turner Valley Field.

J. P. Van de Linden of the Heiland Research Corp. of Canada discussed the used of the reflection seismograph in determining subsurface structural conditions in southern Alberta.

British Columbia

In the Sage Creek area, southeastern British Coulmbia, Columbia Oils' No. 1 is below 2,305 feet and shut down for repairs.

Hudson Bay Junction

In the Makwa Field, 20 miles south of Hudson Bay Junction, in northern Saskatchewan, Amalgamated Gas & Oil Co.'s No. 2 blew into production at 275 feet with 300,000 feet a day open flow. Amalgamated's No. 1, brought in about a month ago, had an initial production of 250,000 feet a day from 277 feet. Rock pressure is about 150 pounds. These wells were drilled as part of a systematic program of structure testing, in preparation for a deeper test for oil. Amalgamated's No. 3 is starting and will be continued through the gas horizon at 275 feet to about 360 feet, where salt brine is expected. It is planned to use the gas as fuel in producing commercial salt from the brine.

Ontario Drilling

In the Dover Field, Kent County, Ontario, Ajax Oil & Gas Co.'s No. 10, Harry Stirling farm, Lot 1, Concession 4, Dover East Township, is below 1,315 feet. Prairie Oil & Gas Co.'s No. 3, Stephens farm, Lot 2, Front Concession, Dover East Township, is below 1,400 feet. F. H. Stover & Son's No. 3, Peter Jubenville farm, Lot 3, Front Concession, is spudding.

In the same field Medina Natural Gas Co.'s No. 2 has been located on the Joseph Antaya farm, Lot 1, Concession 4, Dover East Township, between 1,000 and 1,500 feet north of Medina's No. 1 gasser, and is moving outfit from No. 1.

In the Tilbury Field, Kent County, Ladd & Ziegen's No. 1 Guy Mifflin farm, Lot 7, Concession 14, Tilbury East Township, has been cleaned out after a shot and tubing run. Gas is being delivered to the Southern Ontario Gas Co. and production shows a little increase from the shot.

In the Eden Field Middleton-Norfolk Gas Co.'s No. 2, Vernon McDonald farm, Lot 5, Concession 3, North Talbot Road, Middleton Township, Norfolk County, has been shut in and is waiting for a pump to handle the heavy water flow. The sulphur gas flow has been estimated close to 5,000,000 feet a day.

Sombra Shallow Gas

In Sombra Township, Lambton County, a test for water on the William Stenton property encountered a fair flow of shallow gas. John Conlon, driller, of Sombra states that showings of this sort have been frequent in Sombra Township, the gas being quite often piped and used for lighting and heating in the farm houses. The gas apparently comes from the clay or drift, just above the rock, at depths varying from 150 to 180 feet, and flows are occasionally shut off by either water or sand. Such showings have been especially frequent along the River St. Clair near Port Lambton and Sombra. Mr. Conlin has quite often encountered shows of oil in the same horizon, though not in commercial quantities. Fairly large production has been secured from this horizon in Sarnia Township, further north in Lambton County, and in Howard Township, Kent County, drift wells have been producing gas in comparatively large quantities for many years and have been commercially utilized by the Union Gas Co.

Haldimand Fields

In the Haldimand Field, York Natural Gas Syndicate's No. 1 is drilling in Seneca Township, and five additional tests have been located. Otterville Natural Gas Syndicate No. 3 has finished No. 9 well with 84,000 feet a day open flow, and No. 10 is nearing completion.

Consolidated Natural Gas Co.'s No. 1, Moulton Township, Haldimand County,

(Continued on Page 77)

Seamen's Strike Threatens Serious Trouble for Oil Producers and Marketers in California

By L. P. STOCKMAN
Staff Correspondent, California Fields

LOS ANGELES, Calif., Mar. 18.—The seamen's strike, paralyzing coastwise movement of crude and refined oil, has caused inconvenience to California marketers and prolongation of the strike for another 10 days would prove serious. Companies operating tanker fleets have insisted that the matter be submitted to an arbitration board but the International Seaman's Union demands recognition of the closed shop for marine workers before submitting other demands for adjudication. William Groundwater, director of transportation for Union Oil Co.; Arthur Woll, marine superintendent of General Petroleum, and Paul Lamb, marine terminal superintendent of the Richfield Oil Co., flew from Los Angeles to San Francisco to attend a conference called in the hope of settling the trouble.

Marine terminals at Port San Luis, Estero Bay, Ventura and Monterey have not yet become congested. Ample facilities are available for temporary relief at Port San Luis, Estero and Monterey but the situation is not so good at Ventura as the entire production of the Ventura Avenue Field, averaging 24,500 bbls. per day, is moved to refining centers at Los Angeles and San Francisco by tanker. Field production will have to be suspended as soon as the empty tankage is filled in case of a deadlock.

The Standard Oil Co. recently completed erection of approximately 800,000 bbls. of new tankage at Estero and a similar amount at Rio Bravo station in Kern County. During the immediate crisis, the company is pumping northward through its original pipe line extending from San Joaquin Valley to the Richmond refinery. Up to the present there has been no interference with foreign registered tankers leaving for offshore destinations.

Playa Del Rey

The Palisades section or eastern extension of the Playa Del Rey Field of Los Angeles Basin is getting hotter as each new completion shows a trend toward higher production. The eastern limit of this extension has not yet been determined. Some doubt whether the productive limits will pass Manchester Avenue while optimists assert Manchester is just the beginning.

Development work indicates no fault between this new area and the older section of the field. This impression that a fault existed resulted from erroneous information released on the depth of Charles W. Fourl's outpost located up on the Palisades. The Palisades extension is still open on three sides. The productivity of acreage on the north and south flanks has not yet been determined.

Recent completions have shown exceptionally large production and it is declared a series of 8,000-bbl. wells must have the pay sand back of them to show such a high potential yield. Production contours projected from the older section of the field enclose this new area, but indicate that it should yield wells ranging around 250 bbls. per day. These contours may be of more importance than many believe notwithstanding the large initial daily production of new wells has tended to discredit them. And yet the picture appears rather plain to some because most of the wells completed have been hugging locations close to the axis.

Discrepancy Confusing

A number of operators cannot account for the discrepancy between the initial of new wells in the Palisades extension and those in the older section of the Playa Del Rey Field. The explanation seems simple, but only the bit can reveal just how far east the productive limits will extend. The Playa Del Rey Field is a normal anticlinal structure with the axis running from northwest to southeast but differing from most other fields because the productive formation is located right on top of the schist or basement complex. In the older section of the field production is developed from a conglomerate formation, whereas in the newer extension production is being developed from a normal oil sand. As a consequence, the formation in the new extension is more productive, due to greater porosity. The importance of the productive horizon is determined to a large extent by the amount of potentially productive horizon lying between the nodular shale and the schist.

Development work has indicated that the schist was laid down rather unconformably with the result that its surface represents a series of ripples. The key to the eastern section of the field is believed by many to be found primarily in the fact that the schist is dipping much faster than the nodular shale, which has been adopted as a general marker throughout the field. As a consequence operators are encountering a much greater thickness of oil formation than was present in the older section of the field. As the interval between the nodular shale and the schist becomes greater, the intervening rocks offer an excellent cap for an accumulation. Based on present productive contours, the limits of production in the eastern extension are already established, but this projected possibility, based on productive contours, has been thrown to the winds because of the greater difference in the initial daily production of new wells and the greater amount of potentially productive formation encountered in the eastern end of the field.

The most interesting feature in connection with development work under way in the Playa Del Rey Field is the fact that the nodular shale is plunging down at an angle of approximately 50 degrees while the schist is plunging down at an angle of around 70 degrees. The unconformity of the schist deposit in this field may be found to be the dominating factor from a production standpoint.

Gas Well Removes Doubt

The Standard Oil Co. appears to have removed any doubt as to the potentiality of the Semi-Tropic gas field when it recompleted No. 1 Hill flowing 71,000,000 feet of gas per day from 3,200 feet after the hole had been finished with a 7-inch liner carrying 80 feet of perforated. This new well definitely proves the existence of a natural gas field in the Semi-Tropic area, and while the Standard was obliged to shut in its No. 1 Hill owing to inability to market current production, this district will become a factor of importance from an economic standpoint. This well blew out a few weeks ago and wrecked the rig and surface equipment, but it sanded up within a short time and as a result the company did not experience great financial loss. The big problem now is to find a market for the gas.

Natural gas has not had much of a chance to enter the economic setup owing to the large quantity obtained at Kettleman Hills, Ventura, Dominguez and other fields producing crude oil. Natural gas produced in oil fields has been given preference as far as demand is concerned with the result that the gas fields have been standing by waiting for that opportune moment when they could go on commercial production. For this reason it may be several years before Buttonwillow, Delano, Semi-Tropic and Goleta gas fields become important factors in the economic picture. It is obvious, of course, that eventually these dry gas fields will be called on to meet normal requirements in both the northern and southern part of the state.

Edison

Three new wells were completed in the Edison Field of Kern County in the early part of the current week and while all of them showed commercial production the aggregate was relatively small. The Edison Oil Co.'s No. 2 C.C.M.O. proved a distinct disappointment upon completion at 3,636 feet as it was good for only 460 bbls. of 18.9 gravity oil per day. This well is a direct offset of the company's No. 1 on the same lease which was finished some time ago doing 1,500 bbls. per day.

The Shell Oil Co. surprised the boys by completing No. 1 Community pumping **111 bbls. of 17.9 gravity oil per day from** 3,126 feet after the hole had been plugged back from 3,303 feet. Monterey Exploration Co. got a nice well when No. 11 Duff was brought in flowing 202 bbls. of 26.1 gravity oil per day from 3,538 feet after the hole had been completed with a 5½-inch liner carrying 140 feet of perforated.

It will be several months before the Edison Field becomes a factor of great consequence in the production situation as completions in this field show a wide variation in initial production. The area appears to consist of independent pools with several miles of barren acreage between. Several small fields discovered in the Edison area were the result of the completion of a new well which is now rather remote from most of the acreage undergoing development. Drilling operations in the Mountain View Field of Kern County seem to be tapering off.

Lost Hills—Belridge

Union Oil Co. completed its No. 18 Belridge in the North Belridge Field following an extended period of delayed operations owing to mechanical trouble. This well was originally scheduled for completion about six months ago. Upon conclusion of drilling operations the crew ran in the hole to ream out some tight places before running in the liner, but lost the reamer and several stands of drill pipe. On top of this some wash pipe was lost but by sticking to the job the hole was finally cleaned out and the well put on production.

The company lost several months of production and probably suffered loss of several thousand barrels of initial production through the productive formation being mudded off during the fishing job. This new well has been holding up to 4,980 bbls. per day. No. 18 Belridge is open from 8,165 feet to bottom at 8,523 feet with the hole redrilled down to 8,490 feet.

The General Petroleum has re-entered No. 1 Berry after several months' suspension owing to the crew being transferred to another area but is having a lot of trouble. The hole has been plugged back to 9,500 feet and the company has begun redrilling operations. During the period of suspension, this well has been displaced as the deepest hole. The General Petroleum has spent approximately $400,000 on this deep test, but the expenditure is regarded as justified because if commercial production is developed the well will greatly enhance the company's holdings in this field.

Up in the North Belridge Field, the Belridge Oil Co. is still working with No. 16-35, which was carried down to 8,905 feet with negative results. This hole has been plugged back to 8,538 feet and a production test will be conducted from this point. No. 22-35 has been finished at 5,465 feet and preparations are under way to swab this potential producer.

Signal Oil & Gas Co. added a new well to its list of producers in the Maricopa section of the Midway-Sunset Field by finishing No. 3 Wallace pumping 316 bbls. of 25.8 gravity oil per day from 2,937 feet after the hole had been finished with a 4¾-inch liner carrying 44 feet of perforated. The Standard has topped the oil sand in No. 29-15-D at 2,608 feet and this new well should be given a production test within the next day or two. Honolulu Oil Corp. has also

TANKER SHIPMENTS FROM LOS ANGELES TO DOMESTIC AND FOREIGN PORTS

	March 2		February 24			
Intercoastal-domestic—	Total this week	Daily average	Total last week	Daily average	This year to date	Same time last year
Fuel oil	.....	.....	.....	.....	.....	3,098,674
Diesel and gas oil	54,442	7,777	.....	.....	447,439	345,851
Gasoline	75,578	10,797	116,908	16,701	1,122,373	670,759
Kerosene	142,811	20,402	.....	.....	221,271	303,121
Foreign exports—						
Crude oil	67,074	9,582	336,727	48,104	1,572,422	1,263,208
Fuel oil	325,006	46,429	143,600	20,514	2,358,536	1,961,647
Diesel and gas oil	94,680	13,526	.....	.....	389,211	801,537
Gasoline	287,023	41,003	76,743	10,963	797,021	699,040
Kerosene	20,961	2,994	.....	.....	211,472	207,367
Other unfinished oil	.....	.....	.....	.....	37,097	34,363
Coastwise-domestic—						
Crude oil	233,520	33,360	67,180	9,597	1,348,080	879,048
Fuel oil	167,283	23,898	201,948	28,850	1,925,262	1,995,625
Diesel and gas oil	24,698	3,528	1,767	252	164,632	132,694
Gasoline	81,603	11,658	189,335	27,048	1,443,457	1,726,063
Kerosene	1,921	274	5,967	852	33,484	25,872

TANKER SHIPMENTS FROM SAN FRANCISCO TO DOMESTIC AND FOREIGN PORTS

Intercoastal-domestic—						
Diesel and gas oil	.....	.....	.....	.....	78,075	313,695
Gasoline	.....	.....	.....	.....	.....	72,625
Kerosene	70,510	10,073	.....	.....	149,715	80,925
Asphalt	.....	.....	.....	.....	71,325	.....
Lubricants	8,376	1,339	.....	.....	12,381	8,310
Foreign exports—						
Crude oil	.....	.....	.....	.....	357,485	368,820
Fuel oil	90,892	12,985	14,720	2,103	309,621	176,487
Diesel and gas oil	51,055	7,294	.....	.....	125,612	325,178
Gasoline	152,495	21,785	.....	.....	627,812	565,907
Kerosene	43,350	6,193	.....	.....	121,016	131,662
Lubricants	22,130	3,161	.....	.....	44,246	21,460
Coastwise-domestic—						
Fuel oil	30,086	4,298	100,364	14,338	600,395	612,602
Diesel and gas oil	36,978	5,283	.....	.....	47,468	49,287
Gasoline	215,675	30,811	93,796	13,397	757,954	464,354
Kerosene	4,071	582	2,198	314	10,149	24,721

picked up the oil sand in a new well in this section of the field and should list a new well for completion within the next few days.

Long Beach

Four wells were put on production in the Long Beach Field of Los Angeles Basin during the past week although one of them was a recompletion. This was the Cannon Drilling Co.'s No. 1 Jones, which was returned to production pumping 197 bbls. of 27.4 gravity oil per day from 4,350 feet after the hole had been deepened to this point and finished with a 5-inch liner including 196 feet of perforated.

The Bernal Oil Co. completed its No. 3 Signal and this new well was pumping 309 bbls. of 29.8 gravity oil per day from 5,775 feet after the hole had been finished with a 4¾-inch liner carrying 600 feet of perforated. This new well is of special significance because it is a straight hole and should show a favorable recovery. It borders on a corner of the Sunnyside Cemetery and with this advantage of drainage should show sustained production.

The Medal Oil Co. hung a medal on itself by completing No. 2 Long Beach, a new well pumping 354 bbls. of 36.7 gravity oil per day from 4,188 feet after the hole had been finished with a 5¾-inch liner carrying perforations at 4,075-4,155 feet. Kiowa Oil Co. completed its No. 1 at Long Beach, pumping 293 bbls. of 27.1 gravity oil per day from 4,285 feet after the hole had been finished with a 4¾-inch liner including 63 feet of perforated.

Santa Fe Springs

Bandini Petroleum Co. focused the attention of operators on the Santa Fe Springs Field of Los Angeles Basin this week by recompleting No. 20 Off flowing 1,501 bbls. of 34.3 gravity oil per day from 5,825 feet. This well was redrilled to the completion depth and finished with a 4¾-inch liner carrying 27 feet of perforated. In addition to the oil produced by this well the company is getting 1,800,000 feet of gas per day. The large production developed by this well has prompted the company to increase remedial work in this field with the result that No. 19 Off is being rigged up preparatory to being deepened.

Operators developing acreage in the eastern extension of the Playa Del Rey Field are closely watching each other so that no one will be able to avoid drilling restrictions which provide that no well can be drilled on acreage consisting of less than one full acre. As a result of this close scrutiny, the Pomoc Oil Co. instituted litigation against the President Oil Co. and succeeded in preventing the defendant from beginning drilling operations. Superior Judge Emmett Wilson issued a restraining order and the fire commission promptly revoked the President's drilling permit pending further investigation. President Oil Co. was granted a permit after five lot owners in the town lot section syndicated their interests by permitting the drilling of a well on one of the lots and waiving drilling rights on the remainder. The five lots comprised less than one full acre and if the Los Angeles city council upholds the fire commission this well cannot be drilled.

Montebello

The Montebello Field of Los Angeles Basin is still an enigma and it will remain so until another test is drilled or the Universal Consolidated deepens No. 2 Nutt. This area presents a problem for geologists because there is no surface evidence of a structure. As a result, major companies are reluctant to enter.

Preliminary Program for Panhandle Chapter

AMARILLO, Tex., Mar. 18.—Jimmy Johnson, chairman of the Panhandle Chapter of A.P.I., and his assistants have been working hard on the meeting to be held in Amarillo April 10 and 11 of the production division of the Mid-Continent area. Those in attendance will be offered one of the best programs ever given at a similar meeting. Following is that part of it dealing with the industry. The entertainment part will be announced later.

Program for the Amarillo meeting of the Mid-Continent area division of production A.P.I. April 10-11.

Sessions to be held in the Crystal ballroom of the Herring Hotel.

Wednesday morning, April 10, 9:30 a. m.:

Presiding, C. O. Rison, Indian Territory Illuminating Oil Co., Oklahoma City.

Address of welcome by Mayor Ross D. Rogers of Amarillo.

"A Job in the Petroleum Industry," by M. J. Norrell, director of industry relations, Magnolia Petroleum Co., Dallas.

"Discovery and Early History of the Panhandle Field," by C. N. Gould, director Oklahoma geological survey.

"Geology and Development of the Panhandle Field," by the Panhandle Geological Society.

Wednesday p. m. session:

Presiding, E. L. Bell, Deep Rock Oil Corp., Drumright, Okla.

"Manufacture and Uses of Carbon Black," by H. W. Price and E. B. Reinbold of the Huber Carbon Co. and R. G. Allen of the Cabot Carbon Co.

"Helium From a Scientific Curiosity to Large Scale Production," by C. C. Anderson, United States Helium plant, Amarillo.

Thursday a. m., 9 o'clock:

Presiding, A. J. Ritchie, Derby Oil Co., Wichita, Kan.

"Panhandle Drilling and Use of Miller Method in Balancing Gas Pressure," H. E. Rogers, consulting engineer, Amarillo.

"Pressure Drilling," by S. S. Parker, Hydril Co., Houston.

"Bottom Hole Pressure and Its Relation to Production Control," by D. L. Katz and W. H. Barlow, Phillips Petroleum Co., Bartlesville.

Thursday p. m.:

Presiding, H. L. McQuiston, Phillips Co., Oklahoma City.

"The Controlled Directional Drilling," by C. E. Wright of the Indian Territory Illuminating Oil Co., Oklahoma City, and J. D. Hughes of the Eastman Oil Well Survey Co. of Houston.

"Drilling and Production Problems in the Development of the Fitts Pool," by K. R. Teis of E. H. Moore, Inc., Ada.

"Use of Fibrous Materials in Drilling Fluids," by C. P. Parsons, Halliburtin Cementing Co., Duncan, Okla.

Eastern Fields

(Continued from Page 70)

district, Jackson & Bowers have started drilling the test on the J. A. and Amy Sarver heirs farm. It is 4,000 feet southeast of the South Penn Oil Co.'s No. 4 on the L. D. Webb farm. In this district, the Big Four Drilling Co. is down 1,650 feet in a test on the Frank Wallbrown farm. In Curtis district, Clyde W. Campbell has a location for a test on the Marcellus Hart farm. The Henderson Oil Co. is cementing at 920 feet the test on the E. S. Ball farm.

In Wirt County, Clem Roberts and others are drilling a second test on the N. T. McConaughey farm in Burning Springs district and it is now 1,100 feet deep. In Wetzel County, C. B. Lewis and others are down 2,070 feet in a test on the Nicholas Blatt farm in Proctor district.

IMPORTANT SOUTHERN CALIFORNIA WILDCATS

Company, well and location—	S. T. R.	Depth	Status—
Macrate, A. N., No. 1 Athens, Los Angeles Co.	18- 3-13	6,244	coring ahead
Republic Pet., No. 1 Lawndale, Los Angeles Co.	18- 3-14	2,092	sd. sh. drlg.
Associated Oil Co., No. 2 Inglewood Deep, Los Angeles Co.	7- 2-14	2,590	sd. sh. drlg.
Standard Oil Co., No. 4 Inglewood Deep, Los Angeles Co.	17- 2-14	2,581	sd. sh. drlg.
Standard Oil Co., No. 5 Inglewood Deep, Los Angeles Co.	17- 2-14	6,097	form. test
Ohio Oil Co., No. 16 Del Rey, Los Angeles Co.	28- 2-15	3,794	sd. sh. drlg.
Bel-Mar Oil Co., No. 1 Del Rey, Los Angeles Co.	27- 2-15	181	sd. sh. drlg.
Elliott, D. W., No. 1 Del Rey, Los Angeles Co.	27- 2-15	6,285	cmtd. 6,135
Pacific Drlg. Co., No. 1 Del Rey, Los Angeles Co.	27- 2-15	6,282	cmtd. fish
Mammoth Oil Co., No. 1 Del Rey, Los Angeles Co.	27- 2-15	6,344	prod. test
Fourl, C. W., No. 3 Del Rey, Los Angeles Co.	27- 2-15	6,411	redrlg. 6,281
Fourl, C. W., No. 4 Del Rey, Los Angeles Co.	27- 2-15	....	rigging up
Mathews Pet. Co., No. 1 Del Rey, Los Angeles Co.	27- 2-15	5,460	rebldg. rig
Royalty Service Corp., No. 1 Del Rey, Los Angeles Co.	27- 2-15	6,196	sd. sh. drlg.
Lor-Mar Oil Co., No. 1 Del Rey, Los Angeles Co.	27- 2-15	3,291	sd. sh. drlg.
Schirm & Thayer, No. 1 Del Rey, Los Angeles Co.	27- 2-15	....	bldg. rig
Union Oil Co., No. 8 Del Rey, Angeles Co.	27- 2-15	....	rigging up
Union Oil Co., No. 9 Del Rey, Los Angeles Co.	27- 2-15	5,686	sd. sh. drlg.
Union Oil Co., No. 10 Del Rey, Los Angeles Co.	27- 2-15	....	bldg. rig
Big Ben Oil Co., No. 1 Del Rey, Los Angeles Co.	27- 2-15	6,758	sd. sh. drlg.
Doyle Pet. Co., No. 1 Manhattan, Los Angeles Co.	30- 3-14	6,096	hd. sd. drlg.
Severns Drlg. Co., No. 1 Torrance, Los Angeles Co.	24- 4-15	3,090	sd. sh. drlg.
Frontier Oil Co., No. 1 Pico, Los Angeles Co.	7- 2-11	2,871	sd. sh. drlg.
Shively, N. O., No. 1 Puente Hills, Los Angeles Co.	23- 2-10	3,185	test W.S.O.
Pressel & Tull, No. 1 Puente Hills, Los Angeles Co.	30- 2- 9	4,300	suspended
International Dev. Co., No. 1 Saugus, Los Angeles Co.	34- 5-16	4,335	C.P. 2,005
Republic Pet. Co., No. 1 Newhall, Los Angeles Co.	6- 3-15	1,812	P.B. 1,085
Nuoil Co., No. 1 Newport, Orange Co.	29- 6-10	6,485	suspended
B. & B. Oil Co., No. 1 Newport, Orange Co.	19- 6-10	4,576	suspended
Shannon, C. G., No. 1 Yorba Linda, Orange Co.	21- 3- 9	5,777	P.B. 2,800
Great American Pet. Co., No. 2 East Coyote, Orange Co.	19- 3- 9	3,366	pump 200 b.d.
Bartholomae Oil Co., No. 2 East Coyote, Orange Co.	32- 3-10	1,014	sd. sh. drlg.
Tehama Pet., No. 1 Santa Ana Canyon, San Bernardino	33- 2- 8	2,698	P.B. 2,281
San Diego Pet. Co., No. 1 Chula Vista, San Diego Co.	32-18- 2	6,344	suspended
Stephens, J. T., No. 1 Chula Vista, San Diego Co.	27-18- 2	1,230	hd. sd. drlg.
Edmonds, E. A., No. 1 Trustee, San Diego Co.	29-15- 3	2,431	hd. sd. drlg.

IMPORTANT NORTHERN CALIFORNIA WILDCATS

Company, well and location—	S. T. R.	Depth	Status—
General Pet. Co., No. 14 Capitan, Santa Barbara Co.	32- 5-30	....	rig, suspended
Shell Oil Co., No. 4 Capitan, Santa Barbara Co.	5- 4-30	1,475	sd. sh. drlg.
Fairview Oil Co., No. 1 Purisima, Santa Barbara Co.	18- 7-24	2,980	fishing
Advance Pet. Co., No. 1 Naples, Santa Barbara Co.	7- 4-29	5,775	hd. sh. drlg.
Barnsdall-Rio Grande, No. 10-58 Elwood, Santa Barbara	tideland	3,000	hd. sh. drlg.
Barnsdall-Rio Grande, No. 2 Elwood, Santa Barbara Co.	15- 4-29	3,490	recmtd. 3,297
East Elwood Pet. Co., No. 1 Elwood, Santa Barbara Co.	14- 4-29	3,767	wet, idle
Shell Oil Co., No. 1 Goleta, Santa Barbara Co.	30- 4-28	6,508	swabbing
West Elwood Oil Co., No. 1 Goleta, Santa Barbara Co.	9- 4-28	2,785	resume work
Ortega Oil Co., No. 1 Summerland, Santa Barbara Co.	16- 4-26	4,583	dry, abd.
General Pet. Co., No. 4 Rincon, Ventura Co.	tideland	2,196	hd. sd. drlg.
Las Posas Pet., No. 1 Las Posas, Ventura Co.	22- 3-20	7,800	cleaning out
Oil Ridge Oil Co., No. 1 Ventura, Ventura Co.	1- 4-19	1,573	O. S. drlg.
El Rancho Oil Co., No. 1 South Mountain, Ventura Co.	9- 3-19	401	sd. sh. drlg.
The Texas Co., No. 128 South Mountain, Ventura Co.	4- 3-19	5,754	sd. sh. drlg.
Bolsa Chica Oil Co., No. 2 Piru, Ventura Co.	4- 4-18	830	hd. sh. drlg.
Continental Oil Co., No. 1 Ojai, Ventura Co.	12- 4-23	1,860	hd. sd. drlg.
Prop. Service Corp., No. 1 Lloyd, Ventura Co.	24- 3-23	7,110	cleaning out
Continental Oil Co., No. 1 San Miguelito, Ventura Co.	23- 3-24	....	grading
Standard Oil Co., No. 1 Lost Hills, Kern Co.	2-26-20	2,500	gr. sh. drlg.
General Pet., No. 1 South Belridge, Kern Co.	30-28-21	11,377	P.B. to redrill
Union Oil Co., No. 18 North Belridge, Kern Co.	36-27-20	8,523	flow 5,000 b.d.
Standard Oil Co., No. 1-A North Belridge, Kern Co.	26-27-20	8,195	sd. sh. drlg.
Standard Oil Co., No. 2 North Belridge, Kern Co.	36-27-20	5,671	redrlg. 5,700
Belridge Oil Co., No. 32-35, North Belridge, Kern Co.	35-27-20	....	rigged up
Amerada Pet., No. 2 Blackwells Corner, Kern Co.	17-26-19	2,155	dry, abd.
Standard Oil Co., No. 1 Delano, Kern Co.	1-25-23	2,455	gas, shut in
Standard Oil Co., No. 2 Delano, Kern Co.	1-25-23	....	location
Trico Oil & Gas Co., No. 1 Alpaugh, Kern Co.	3-25-23	2,525	gas well
Trico Oil & Gas Co., No. 3 Alpaugh, Kings Co.	36-24-22	2,610	cmtd. 2,563
Trico Oil & Gas Co., No. 4 Alpaugh, Kern Co.	3-25-23	....	bldg. rig
Signal Oil & Gas Co., No. 1 McVan, Kern Co.	10-27-27	....	grade
Macmillan Pet. Co., No. 1 McVan, Kern Co.	2-27-27	....	rig, suspended
Golden Bear Oil Co., No. 1 Kern Front, Kern Co.	32-27-27	2,751	gr. sd. drlg.
Hancock Oil Co., No. 4 Mountain View, Kern Co.	14-30-28	5,337	flow 4,350 b.d.
Associated Oil Co., No. 1 Mountain View, Kern Co.	3-31-29	5,501	suspended
Shell Oil Co., No. 1 Mountain View, Kern Co.	32-30-29	3,950	sd. sh. drlg.
C. C. M. Oil Co., No. 1 Mountain View, Kern Co.	11-30-28	....	bldg. rig
Union Oil Co., No. 5 Mountain View, Kern Co.	15-30-28	5,474	to whipstock
Union Oil Co., No. 6 Mountain View, Kern Co.	9-30-28	6,153	hd. sd. drlg.
General Petroleum, No. 3 Mountain View, Kern Co.	14-30-28	4,892	sd. sh. drlg.
The Texas Co., No. 4 Mountain View, Kern Co.	14-30-28	5,526	redrlg. 5,296
The Texas Co., No. 5 Mountain View, Kern Co.	14-30-28	4,851	sd. sh. drlg.
Barnsdall, No. 3 Mountain View Deep, Kern Co.	31-30-29	7,900	sd. sh. drlg.
Hogan Pet., No. 6 Mountain View, Kern Co.	4-31-29	5,797	sd. sh. drlg.
Hogan Pet., No. 7 Mountain View, Kern Co.	29-30-29	3,301	sd. sh. drlg.
Jergins Trust, No. 5 Mountain View, Kern Co.	24-30-28	1,780	sd. sh. drlg.
Standard Oil Co., No. 5 Mountain View, Kern Co.	24-30-28	5,370	cmtd. 5,364
Standard Oil Co., No. 6 Mountain View, Kern Co.	23-30-28	5,372	cmtd. 5,355
Hoyt, Otis, No. 2 Mountain View, Kern Co.	24-30-28	5,755	redrlg. 5,720
Ohio Oil Co., No. 1 Mountain View, Kern Co.	33-30-29	5,999	P.B. 5,736, idle
Mountain View Oil Co., No. 1 Mountain View, Kern Co.	25-30-28	5,354	show. O.&G.
Gilmore Oil Co., No. 1 Edison, Kern Co.	23-30-29	....	rig, suspended
Jergins Trust, No. 5 Edison, Kern Co.	24-30-29	....	rig, suspended
Jergins Trust, No. 6 Edison, Kern Co.	13-30-29	1,600	sd. sh. drlg.
Jergins Trust, No. 7 Edison, Kern Co.	14-30-29	1,289	cmtd. 1,151
Consd. Crude Oil Co., No. 1 Edison, Kern Co.	17-30-29	5,514	swabbing
Shell Oil Co., No. 4 Edison, Kern Co.	15-30-29	3,776	flow 80 b.d.
Shell Oil Co., No. 5 Edison, Kern Co.	21-30-29	3,126	pump 110 b.d.
Shell Oil Co., No. 6 Edison, Kern Co.	14-30-29	974	sd. sh. drlg.
Monterey Expl. Co., No. 6 Edison, Kern Co.	15-30-29	3,528	flow 200 b.d.
Monterey Expl. Co., No. 7 Edison, Kern Co.	15-30-29	3,268	P.B. 3,170, idle
Chaulk Oil Co., No. 1 Edison, Kern Co.	5-30-29	1,051	sd. sh. drlg.
H. & B. Oil Co., No. 1 Edison, Kern Co.	6-30-30	930	sd. sh. drlg.
Seeple Oil Co., No. 1 Edison, Kern Co.	4-30-29	....	rig, suspended
The Texas Co., No. 1 Edison, Kern Co.	4-30-29	3,517	bailing
Mohawk Oil Co., No. 1 Edison, Kern Co.	3-30-29	....	rigging up
Foster, Inc., No. 1 Edison, Kern Co.	8-30-29	4,965	O.S. drlg.
Berry Oil Co., No. 1 Edison, Kern Co.	25-30-29	491	sd. sh. drlg.
General Pet., No. 3 Edison, Kern Co.	24-30-29	1,675	rig to pump
General Pet., No. 4 Edison, Kern Co.	14-30-29	....	rigging up
Petroleum Drilling Co., No. 1 Edison, Kern Co.	22-29-29	852	sd. sh. drlg.
Signal Oil & Gas Co., No. 1 Edison, Kern Co.	31-29-30	3,258	suspended
Signal Oil & Gas Co., No. 2 Edison, Kern Co.	5-30-30	....	material
Signal Oil & Gas Co., No. 3 Edison, Kern Co.	36-29-29	193	suspended
Sea Cliff Oil Co., No. 1 Greenfield, Kern Co.	7-31-28	3,681	sd. sh. drlg.
Standard Oil Co., No. 1 Semi-Tropic, Kern Co.	8-27-23	3,200	prod. test
Seeple, J. O., No. 1 Elk Hills, Kern Co.	5-30-24	3,731	suspended
Richfield Oil Co., No. 2 Devil's Den, Kern Co.	14-25-18	2,501	cmtd. 1,695
The Texas Co., No. 1 Temblor, Kern Co.	29-29-21	4,281	gr. sh. drlg.
Shell Oil Co., No. 1 Buena Vista, Kern Co.	9-32-25	4,870	hd. sh. drlg.
Reserve Oil & Gas Co., No. 1 Tejon, Kern Co.	2-10-19	3,420	hd. sh. drlg.
Badger Oil Co., No. 1 Tejon, Kern Co.	31-11-19	6,248	will redrl.
Russ Oil Synd., No. 1 Dos Palos, Fresno Co.	28-12-11	5,110	rebldg. rig
Wellington Oil Co., No. 1 Coalinga, Fresno Co.	14-20-14	451	sd. sh. drlg.
Union Oil Co., No. 1 Lillis-Kettleman, Fresno Co.	24-21-16	10,944	redrlg. 6,750
K.N.D.A., No. 56 Kettleman, Kings Co.	8-22-16	10,154	redrlg. 9,700
Standard, No. 2 Kettleman Middle, Kings Co.	29-23-19	3,550	sd. sh. drlg.
Continental Oil Co., No. 1 Kettleman-South, Kern Co.	7-25-20	3,571	hd. sh. drlg.
Farrel Pet., well No. 1, San Luis Obispo Co.	18-31-12	1,432	hd. sh. drlg.
Willett Oil Co., No. 1 Cholame, San Luis Obispo Co.	10-25-15	3,660	cmtd.
Schuster, C. R., No. 1 Tulare, Tulare Co.	27-22-23	....	bldg. rig
Commonwealth Consd. Gas Co., No. 1 Tulare Lake, Kings	31-22-20	2,490	gas well
Commonwealth Consd. Gas Co., No. 2 Tulare Lake, Kings	31-22-20	....	rig, rained out
General Pet., No. 1 Devil's Den, Kings Co.	20-24-18	499	redrlg. 153
Buttes Oilfields Co., No. 2 Marysville, Sutter Co.	35-16- 1	7,013	to set pipe
Amerada Pet., No. 1 F.L.D., San Joaquin Co.	15- 2- 5	....	material
Pure Oil Co., No. 1 Chowchilla, Madera Co.	7-10-14	8,402	P.B. 8,085, idle
Northern Counties Pet., No. 1 Tehama, Tehama Co.	25-24- 3	2,855	gr. sd. drlg.
The Texas Co., No. 1 Petrolia, Humboldt Co.	1- 5- 2	4,852	sd. sh. drlg.

Further Decline in Potential of Oklahoma City Wells; Fitts Wells Continue Rich Output

By JAMES McINTYRE

The past week in Oklahoma was one of routine completions and a paucity of new work started. Operators appear to be waiting for the final action of the state legislature and the governor in the matter of the gross production tax, which some legislators would like to see increased to 8 per cent with no limit on the time.

In the Oklahoma City Field 250 wells in the Wilcox sand zone tested for potential production, showed a decline of 52.8 per cent from the tests made last November. They produced 250,043.12 bbls. in 16 hours or at an average rate of 1,500 bbls. per well per day of 24 hours. Some of the wells in the group had been reconditioned and showed an increase. One of these wells, Indian Territory Illuminating Oil Co.'s No. 2 M. K. & T., which tested 21.81 bbls. last November, made 156 bbls. in the recent test, or an increase of 615.3 per cent.

Oklahoma will have a federal allocation of 493,300 bbls. per day in April, an increase of 2,300 bbls. per day over the March allocation.

Estimated Production

Estimated production by pools in Oklahoma for the week ended March 16 and for the preceding week follows:

	Barrels	
	Mar. 16	Mar. 9
Allen	8,325	8,575
Asher-West Asher	1,425	1,425
Burbank	8,500	8,500
South Burbank	10,000	10,000
Balance of Osage	27,500	27,500
Blackwell	4,700	4,700
Bristow-Slick	9,500	9,500
Chandler	5,750	5,760
Crescent	4,350	3,775
Cromwell	4,300	4,300
Cushing-Shamrock	13,100	13,000
Duncan district	4,350	4,300
Edmond	1,200	1,200
Fish	8,525	8,200
Fitts	12,175	6,200
Gray	2,025	1,375
Graham	3,650	3,650
Healdton	9,000	9,000
Hewitt	4,800	4,800
Holdenville	1,900	1,950
Keokuk	2,550	1,775
Konawa	2,325	2,250
Lucien	9,725	7,450
Marshall-Lovell	850	850
Oklahoma City	162,900	136,450
Papoose	1,300	1,300
Polo	3,725	2,275
Sasakwa and townsite	2,825	2,250
Sholem-Alechem	4,500	4,000
Seminole Field:		
Bowlegs	11,500	10,975
Carr City	6,850	4,375
Earlsboro	9,100	8,375
East Earlsboro	9,025	7,225
South Earlsboro	1,000	1,025
Little River	13,725	11,325
East Little River	875	950
Maud	1,875	1,600
Mission	3,200	3,675
Seminole	11,275	9,350
East Seminole	1,175	1,150
Searight	3,800	3,425
Total Seminole	73,400	63,450
St. Louis-Pearson	26,425	22,125
Tatums	5,600	5,600
Tonkawa-Garber-Thomas	6,000	6,000
Wewoka	3,800	3,800
Yale-Jennings	4,800	4,800
Other pools	55,009	55,675
Total Oklahoma	510,309	457,650

E. H. Moore and others' No. 2 Smith, C SE NW NE Section 36-2-6, produced 1,936 bbls. of oil in three hours through casing. It found Bromide at 4,215 feet, sands at 4,325 and 4,410 feet, total depth 4,434 feet, with no McLish reported. Same operators' No. 4 Smith, NE NE NE Section 36-2-6, got the Bromide at 4,130 feet, first sand at 4,200 feet, rich pay at 4,278 feet, another sand at 4,306 feet and McLish at 4,330 feet. The well flowed at the rate of 700 bbls. per hour while being drilled in, but it had not been given a production test.

Pure Oil Co.'s No. 4, SE SW NE Section 11-7-6, in Seminole County, an old well completed in the first Wilcox sand at 4,333-61 feet, from which it started at 630 bbls. a day, was deepened to second Wilcox at 4,410-15 feet, total depth, and showed 80 bbls. in 24 hours with a little water.

The Siliceous lime pool in the Hominy district in Osage County yielded another good well in the past week, Finance Oil Co.'s No. 27, CWL S half N half SW Section 19-23-9, started at 55 bbls. per hour at 2,484-96 feet. It was shut in and when reopened started at 40 bbls. an hour. The lease offsets two tracts that will be put up for auction at the sale of Osage leases on March 27.

The Wewoka Pool in Seminole County which started the development of the Greater Seminole area was 12 years old on Sunday, March 17. The general area including all the pools in Seminole, Hughes, southern Okfuskee, northern Pontotoc and Pottawatomie Counties have produced approximately 828,000,000 bbls. in the 12 years' time, and in the past week produced over 139,000 bbls. per day.

Western Field Completions

The Texas Co. completed No. 3 Denny, NE NE SE Section 33-17-4w, in the Crescent Pool, Logan County. It flowed 810 bbls. in six hours when it came in late in January from sand at 6,088-6,113 feet. On a potential test recently made it flowed 545.68 bbls. in six hours.

Black Gold Petroleum Co. abandoned its wildcat test in Kingfisher County, No. 1 Cole, C SW NE Section 24-18-5w, at a total depth of 6,709 feet in Sylvan shale. Hunton was topped at 6,673 feet. The hole was dry in all formations.

Stanolind Oil & Gas Co. completed No. 1 Veitz, C NW SW Section 27-20-2w, in the Polo Pool in Noble County. It was given a potential rating of 1,671 bbls. per day. The well made 1,113 bbls. in 13½ hours with 2,000,000 feet of gas late in February, producing from sand at 5,073-96 feet, total depth 5,099 feet.

Sinclair Prairie Oil Co. completed No. 3 Smith, SE NE NE Section 28-22-2w, Polo Pool. It is a small well for that pool, 75 bbls. per day. It was shot with 40 quarts at 4,902-30 feet, the first Wilcox sand. It had been drilled to 4,955 feet and plugged back.

Marathon Oil Co. completed its wildcat test, No. 1 Gilbert, NE NE NE Section 24-22-2e, Noble County, in Wilcox sand topped at 4,449-74 feet. This well came in in January flowing 392 bbls. in 21 hours. After the Gulf Pipe Line Co. laid a line and connected the well late in February it started producing and has been averaging about 240 bbls. per day since. It was cutting about 2 per cent when last reported.

Oklahoma County

Phillips Petroleum Co. made a location for No. 1 Kennedy, 231 feet from south and 940 feet from east lines of NE quarter Section 34-12-3w, Oklahoma County.

In the Oklahoma City Field Sunray Oil Co., Wirt Franklin and others' No. 1 Country, 400 feet from north and 40 feet from west lines of NE quarter Section 1-11-3w, flowed by heads 1,464 bbls. in 24 hours from a total depth of 6,494 feet, no sand record being available.

Lincoln County

Slick-Urschel, Inc.'s No. 1 Miller, NW NW SE Section 25-15-3, Lincoln County, a wildcat, was dry and abandoned at 5,095 feet. First Wilcox sand was topped at 5,028 feet and second at 5,078 feet.

Okfuskee County

Mid-Continent Petroleum Corp.'s No. 1 Haney, SW SE NE Section 24-12-8, Okfuskee County, was shut in as a gas well. It made 15,500,000 feet of gas and a salt water spray after having been acidized.

Hillcrest Oil Co.'s No. 1 Mingo, SW SE NW Section 25-10-10, Okfuskee County, was dry and abandoned at 3,262 feet. It had Cromwell sand at 3,240 feet.

Greater Seminole Field

Mid-Continent Petroleum Corp.'s No. 1 Gassoway, SE SE NE Section 14-6-5, Seminole County, swabbed 280 bbls. of oil in 18 hours from dolomite at 3,772 feet, total depth 3,848 feet. It was to be given a pumping test.

Southern Oil Co.'s No. 1 Osborn, NW SW NE Section 11-6-6, completed a 12,000,000-foot gasser from sand at 2,413-28 feet.

Roy Pierce and others' No. 1-A Spillman, C SW SW Section 7-6-8, Seminole County, pumped 38 bbls. in four hours at a total depth of 2,894 feet. Gilcrease sand was topped at 2,808 feet, first pay at 2,835 feet. It had been shot with 100 quarts of nitroglycerin.

Fitzpatrick and others' No. 2 Dixon, NW SW NE Section 12-9-8, Seminole County, was completed as a gas well in sand at 1,708-45 feet. It was good for 4,000,000 feet with a rock pressure of 370 pounds.

Magnolia Petroleum Co.'s No. 6 Reed, SW SE SE Section 30-7-8, Fish Pool, Seminole County, took a potential test

Wildcat Operations in Oklahoma

Week Ending March 16

NORTHERN OKLAHOMA

BECKHAM COUNTY

Fred Coogan et al's No. 1 Shelton, SW cor. Sec. 32-10-25w.
Drlg. 2,350 ft.

CADDO COUNTY

H. W. Lee et al's No. 1 Horton, NE NE NE Sec. 9-6-13w.
Cellar.

H. W. Lee et al's No. 1 Stacey Ferrell, SW NE NE Sec. 3-6-13w; (2,000-ft. test).
Lowering 8-in. csg. 3,002 ft.; showing of oil at 1,960-2,003 ft.; S.D.

Denver Prod. & Ref. Co.'s No. 1 Noe, NW SW SW Sec. 34-10-10w.
T.D. 11,230 ft.; C.O. to 10,000 ft.; flowing by heads 100 bbls. oil every other day.

CLEVELAND COUNTY

Sinclair Prairie et al's No. 1 Franklin, SE NW SE Sec. 21-10-2w.
Drlg. 4,640 ft.

COAL COUNTY

J. D. Petty Oil Co.'s No. 1 McMillan, SW NW NE Sec. 16-1s-8.
S.D. 1,110 ft.

H. F. Potts' No. 1 Nichols, C SW SW NW Sec. 32-2-9.
Drlg. 1,480 ft.

GARFIELD COUNTY

Herndon Drlg Co. et al's No. 1 Allen, NE NE SW Sec. 35-24-3w.
Drlg. 4,410 ft.

GARVIN COUNTY

Charles Carter and W. S. Key, Inc.'s No. 1 Wood, C NW SW SE Sec. 5-4-3e.
Set surface pipe.

National Prod. Co.'s No. 1 Littrell, NE NE NE Sec. 31-2-3w.
6⅝-in. csg. 1,244 ft.; S.D. 1,378 ft.

George L. Pace's No. 1 Smith, SW NE Sec. 35-1-1.
Spudded and S.D.

George Pace et al's No. 1 Smith, SW SW NE Sec. 35-1n-1e.
Drlg. 400 ft.

GRADY COUNTY

Carter Oil Co. and Magnolia Pet. Co.'s No. 1 Harrison C-34, C NW NW Sec. 28-3-5w.
T.D. 5,963 ft.; cmt. plug placed at 5,200-5,450 ft.

GRANT COUNTY

Helmerich & Payne's No. 1 Crouse, C NE SW Sec. 29-25-8w.
T.D. 6,131 ft.; drilled cmt. plug 6,018 ft.; small show of gas.

GREER COUNTY

Morgan et al's No. 1 Carder, C SW SE Sec. 19-4-22w.
Set 10-in. pipe at 60 ft.

HUGHES COUNTY

Amerada Pet. Corp.'s No. 1-A Adams, NE NE SW Sec. 31-9-9.
Hunton 4,023 ft.; drlg. 4,030 ft.

Danuridge & Crane's No. 1 Mead, NW NW NE Sec. 17-5-9.
Drlg. 1,285 ft.

Freeman et al's No. 1 Kite, NW NW NE Sec. 8-6-10.
Set 5-in. csg. 598 ft.

KAY COUNTY

Harris & Haun's No. 1 Schuessler, C NW SW Sec. 3-28-2.
Drlg. 2,950 ft.

Bay Oil Co.'s No. 1 Holden, SW SW SE Sec. 14-28-3.
5-in. 2,945 ft.; drlg. plugs.

KINGFISHER COUNTY

Black Gold Oil Co.'s No. 1 Cole, C SW NE Sec. 24-18-5w.
Dry and abd. 6,709 ft.

LINCOLN COUNTY

Carter Oil Co. et al's No. 1 McFarland C-33, SW SW NE Sec. 13-13-4.
Rig.

Chester L. Carlock's No. 1 Young, C N½ NW NW Sec. 23-15-5.
Rig.

Mid-Continent Pet. Corp. et al's No. 1 Nunn, SE SE NW Sec. 25-15-1.
Location.

Slick-Urschel, Inc.'s No. 1 Miller, NW NW SE Sec. 25-15-3.
Tonkawa sand 3,995 ft.; drlg. 4,870 ft.

Slick-Urschel's No. 1 Miller, NW SE Sec. 25-15-3.
Drlg. 4,640 ft.

LOGAN COUNTY

Shell Pet. Corp. et al's No. 1 Hirzel, SE SW SW Sec. 7-16-2w.
Cored 6,025-31 ft.; run Schlumberger test.

Sinclair Prairie and Slick-Urschel's No. 1 Koatsch, SW cor. Sec. 23-15-3w.
9-in. csg. cmtd. at 5,227 ft.

Sinclair Prairie Oil Co. et al's No. 1 School land, SE cor. Sec. 36-17-1w.
Simpson dense 5,255 ft., T.D.; flowed 293 bbls. in 24 hrs.; top sand at 5,285-90 ft., T.D.; H.F.W.; P.B. with 6 sacks of cmt.

Slick-Urschel et al's No. 1 Pennington, C SW NE Sec. 10-16-1w.
Drlg. 4,738 ft.

J. C. Schaffer et al's No. 1 Hammond, SE SE SW Sec. 10-15-4w.
Drlg. 4,125 ft.

McCLAIN COUNTY

C. W. James et al's No. 1 Neal, C NW SE SW Sec. 4-5-3.
Hunton 3,335-37 ft.; running 8-in. csg.

NOBLE COUNTY

Marathon Oil Co.'s No. 1 Gilbert, NE cor. Sec. 24-22-2.
Wilcox sand 4,449 ft.; T.D. 4,480 ft.; flowed 1,793 bbls. in 7 days; may deepen.

OKFUSKEE COUNTY

Amerada Pet. Corp.'s No. 1 Jaynes, NW NW SW Sec. 28-10-10.
Hunton 3,690 ft.; 10,000,000 ft. of gas at 3,704 ft.; 7-in. csg. 3,749 ft.

Mid-Continent Pet. Corp.'s No. 1 Haney, SW SE NE Sec. 24-12-8.
Acidized Wilcox sand 4,126-34 ft.; gas broke in; spraying oil.

OKLAHOMA COUNTY

W. H. Atkinson et al's No. 1 Reed, NE cor. Sec. 4-12-3w.
Drlg. 1,500 ft.

Anderson & Kerr et al's No. 1 Linn, SW NW Sec. 17-14-3w.
Drlg. 3,610 ft.

Gypsy Oil Co.'s No. 1 Shock, NW SW SW Sec. 2-14-3w.
Rigging up rotary.

R. Carl Larkin's No. 1 Brobine, NW NW NE Sec. 33-13-5w.
Rig and pits.

OSAGE COUNTY

Peters Pet. Co. and Norbla Oil Co.'s No. 1, SW cor. Sec. 15-25-5.
S.D. at 3,134 ft.

PAYNE COUNTY

Marathon Oil Co.'s No. 1 Potts, C SW SW Sec. 27-19-2
Top Arbuckle 5,085 ft.; T.D. 5,116 ft.; P.B. to 4,550 ft.; set 6-in. 4,489 ft.; drilled plug and got wtr.; P.B. to 4,510 ft.; H. F.W.

PITTSBURG COUNTY

McAllister Pet. Corp. et al's No. 1 Chunn, C SE NW Sec. 29-4-14.
T.D. 1,530 ft.; pipe collapsed; S.D.

P. H. Gray et al's No. 1 Lee, NW SE Sec. 12-5-12.
Drlg. 1,150 ft.

PONTOTOC COUNTY

Anderson & Kerr's No. 1 Newburn, NW SW NE Sec. 24-5-3.
Rig.

(Continued on Page 77)

and flowed 428 bbls. in six hours from Wilcox sand at 4,220-66 feet. Dolomite was topped at 4,218 feet and Wilcox sand at 4,264 feet.

Southern Oil Co.'s No. 1 Osborne, NW SW NE Section 11-6-6, Seminole County, is a 12,000,000-foot gasser at 2,423-28 feet, and was completed at a total depth of 2,454 feet.

Pure Oil Co. and Sovereign Oil Co. completed No. 2 Coker, NW SE NE Section 2-8-5. It pumped 1,084 bbls. in a 48-hour potential test from Hunton lime at 4,003-16 feet, which had been acidized. It had been drilled to second Wilcox sand at 4,340-4,403 feet, total depth, where it got salt water and was plugged back.

E. W. Jones' No. 2 Brandenburg, NW NW NE Section 10-7-4, was completed. It swabbed 41 bbls. in 24 hours from pay at 3,473-3,508 feet.

Dingee and others' No. 1 Williams, NE NE NW Section 14-7-4, Pottawatomie County, is a 60-bbl. pumper completed in dolomite at 4,086-4,170 feet. Simpson dense was topped at 4,082 feet and dolomite at 4,138 feet.

Magnolia Petroleum Co. was building rig for No. 1 Reed, NE SW SW Section 27-8-8, Seminole County.

Westgate Oil Co. made a location for No. 3 Schrader, 405 feet from north and 990 feet from west lines of NE quarter Section 6-6-5, Pottawatomie County.

Smith & Scott have cellar and pits dug for No. 1-A McGee, SE NW NW Section 3-7-4, Pottawatomie County.

Pontotoc County

In the Fitts Pool, Pontotoc County, Magnolia Petroleum Co. completed No. 1 Schaffer, SE SE NW Section 25-2-6. It had Bromide at 4,150 feet and sands at 4,245 feet and 4,320 feet, total depth 4,335 feet. It flowed 705 bbls. in two hours through casing and tubing.

E. H. Moore and others completed No. 3 G. Smith-B, NW NE NE Section 36-2-6. Bromide lay at 4,125 feet, first sand at 4,235 feet, second sand at 4,290 feet and McLish at 4,350 feet, total depth 4,357 feet. It flowed 1,444 bbls. in two hours through casing.

Deep Rock Oil Co. completed No. 5 Hardin, NE SE NE Section 30-2-7, as a gas well. It started at 36,000,000 feet of gas from sand at 1,636-1,828 feet, total depth.

Stanolind Oil & Gas Co. completed No. 7 Hardin, a twin, SE NW SW Section 30-2-7. It had Bromide at 3,950 feet, first sand at 4,060 feet, second sand at 4,120 feet and McLish at 4,190-4,208 feet. It flowed 741 bbls. in two hours through casing and produced gas at the rate of 3,000,000 feet per day.

Sledge & Lynch completed their wildcat test, No. 1-A Thompson, a twin, SW NE SW Section 1-1-7, in Hunton lime which was acidized at 4,096-4,108 feet. It swabbed 36 bbls. of net oil the first 24 hours and 80 bbls. the second 24 hours. It had been drilled to 4,656 feet and plugged back.

Phillips Boyle has cellar and pits ready for No. 1 McCracker, NE NW NW Section 31-5-4, Pontotoc County. It is a wildcat test on a seismographed structure.

W. A. Delaney and others made a location for No. 6 Hardin, SE NW NW Section 30-2-7.

Pittsburgh County

Choctaw Gas Co. was rigging up standard tools for No. 1 Bunyard, SE SE NE Section 18-7-18, Pittsburgh County.

Jackson County

The Altus area in Jackson County, opened by the Gypsy Oil Co. in July, 1934, wtih its No. 1 Kelly in Section 10-1n-20w, is still an uncertainty. The Gypsy Oil Co. has planned 25 tests in Jackson County this year and there are 21 tests now drilling or scheduled to be drilled in all directions from the discovery well, the play having extended into Tillman, Harmon and Greer Counties. A number of disappointments have already darkened the outlook for a field of large area, but they do not appear to have dimmed the enthusiasm of some operators, as new locations are reported weekly.

In the Altus Field in Jackson County, Gypsy Oil Co.'s No. 1 Edwards, SE SE SE Section 3-1n-20w, was acidized with 950 gallons in lime at 1,663-67 feet and swabbed 35 bbls. of net oil in 24 hours and later pumped 20 bbls. in 24 hours.

McCarty Oil Co.'s No. 1 Cole, SE SE SW Section 34-2n-20w, was dry and abandoned at 1,707 feet. It had Granite Wash at 1,005-12 feet, 1,170-76 feet and 1,194-1,201 feet, with a showing of oil in each; lime at 1,409-10 feet, and Granite Wash at 1,410-29 and 1,458-60 feet with a show of oil at the last named depth.

Dick Schleig abandoned his No. 1 James, NE NE NE Section 23-1n-20w, at 1,904 feet. It had Granite Wash at 1,055-60 feet and at intervals down to 1,793-1,830 feet.

Schleig Oil Co. and others' No. 1 Richardson, SW NW SE Section 30-1n-19w, a location, was abandoned.

Comanche County

Ashcraft & Palmer's No. 1 Noble, SE SE NW Section 28-2n-10w, Comanche County, completed a 3-bbl. well at 457-65 feet.

New work in the southern counties included the following operations and locations: Lish Brothers' No. 2 Crosbie, SE SW SW SW Section 23-1s-5w, Stephens County, drilling with machine at 560 feet; Ashcraft & Palmer's No. 2 Noble, SE cor. NW Section 28-2n-10w, Comanche County, a machine; Gypsy Oil

GULF COAST WATER SHIPMENTS IN JANUARY

Company and terminal—	Crude—Coastwise	Crude—Export	Refined—Coastwise	Refined—Exports	Total
Atlantic Pipe Line Co.:					
Atreco	1,363,611.00	.....	17,891.00	.....	1,381,502.00
Texas City	300,024.00	.....	6,996.00	.....	307,020.00
Harbor Island	409,311.00	.....	.....	.....	409,311.00
Gulf Refining Co.:					
Port Arthur	279,911.37	.....	1,986,254.58	46,385.13	2,312,551.08
Humble Oil & Refining Co.:					
Baytown	987,441.29	.....	2,861,768.64	707,797.79	4,557,007.72
Harbor Island	2,202,989.08	.....	.....	.....	2,202,989.08
Ingleside	33,616.82	.....	.....	.....	33,616.82
Texas City	236,050.80	.....	.....	.....	236,050.80
Magnolia Petroleum Co.:					
Beaumont	804,318.66	.....	1,998,704.45	.....	2,803,023.11
Pure Oil Co.:					
Smiths Bluff	558,835.00	.....	736,382.00	.....	1,295,217.00
Shell Petroleum Corp.:					
Houston	369,969.27	.....	1,064,528.35	157,552.74	1,592,050.36
Norco	.....	.....	451,875.61	.....	451,875.61
Standard Oil Co. of La.:					
Baton Rouge	200,377.00	.....	1,227,998.00	223,261.00	1,651,636.00
Sun Oil Co.:					
Sabine Pass and Sun	1,564,020.38	.....	.....	.....	1,564,020.38
Texas Co.:					
Port Arthur	1,514,150.00	171,839.00	2,150,911.00	598,004.00	4,434,904.00
Miscellaneous:					
Houston	1,453,313.44	160,136.00	1,572,048.01	270,568.47	3,456,065.92
Total Jan., 1935	12,277,939.11	331,975.00	14,075,357.64	2,003,569.13	28,688,840.88
Total Dec., 1934	12,566,111.48	656,154.08	13,967,081.54	1,637,254.15	28,826,601.25
Difference	288,172.37	324,179.08	108,276.10	366,314.98	137,760.37

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GATX GENERAL

Co.'s No. 1 L. R. Wells, NW NW NW Section 11-1n-20w, Jackson County, location; Harrell-Davis Oil Co.'s No. 1 Summers, NW NW NE Section 13-1n-20w, Jackson County, drilling at 30 feet; Burke-Greis Oil Co.'s No. 2 Milbrandt, SW NW SW Section 31-3n-19w, Jackson County, location; M. C. Ent and R. C. Camp's No. 1 Simonton, SW SW SE Section 29-5n-21w, Greer County, location for a 2,000-foot test; Jud Leath and others' No. 1 McConnell, NE NW NW NW Section 22-3n-24w, Harmon County, building rig for 3,500-foot test; H. W. Lee and others' No. 1 Horton, NE NE NE Section 9-6n-13w, Caddo County, cellar dug for 2,000-foot test.

Canadian Fields

(Continued from Page 72)

finished at 777 feet with 42,000 feet flow and 195 pounds rock pressure. The syndicate holds 379 acres in Moulton Township and has taken over from Selected Natural Gas Syndicate 507 acres additional with 10 producing wells in Canboro, Oneida and Moulton Townships. Officers of the Consolidated Natural Gas Syndicate are: President, John J. Ryan, Jr.; vice president, Harvey W. Wilson; secretary treasurer, Alston Carlyle; director, Henri St. Jacques, K.C.

The Domestic Gas Syndicate held its annual meeting at Toronto recently, when directors were elected as follows: W. E. Stanley, Toronto; J. H. R. Elliott, Blyth; W. D. Bayne, St. Mary's. The syndicate, operating in Seneca Township, Haldimand County, has drilled eight wells, of which eight were producers; and has purchased one producing well from Peninsular Petroleums, Ltd. Domestic's No. 10 is drilling. Production is taken by the Dominion Natural Gas Co. at a rate of 25 cents per 1,000 feet.

Wildcat Operations in Oklahoma

(Continued from Page 75)

E. M. Blanchard's No. 1 Crabtree, NE SE NE Sec. 27-3-6.
S.D. 2,920 ft.
Charles E. Carter's No. 1 Wood, NW SW SE Sec. 5-4-3.
S.D. 2,070 ft.
Crabtree's No. 1 Chandler, NE SE SW Sec. 4-5-6.
Drlg. 110 ft.
Crabb-Craw Oil Co.'s No. 1-A Breco, SE NE SW Sec. 3-4-6.
Sand 1,106-18 ft.; pumped 10 bbls. in 24 hrs.; S.D.
Fleetborn Oil Corp.'s No. 1 Oliver, NE NW SE Sec. 21-4-5.
Location.
C. W. James et al's No. 1 Neal, C NW SE SW Sec. 4-5-3.
Viola 3,798 ft.; T.D. 3,807 ft.; lowering 7-in. csg.
Mudge O. & G. Co.'s No. 1 Clampett, SW NW NW Sec. 10-2-6.
S.D. 915 ft.
Paramount Oil Co.'s No. 1 Graham, SW SE SW Sec. 13-1-7
500 ft. wtr. in hole from second Bromide sand at 3,288-98 ft.
Gillett & Kroeger's No. 1 Robbins, NE SE Sec. 31-1-4.
Machine.
Gillette & Kroeger's No. 1 Duver, NW SE Sec. 36-1n-6e.
Drlg. 1,185 ft.
H. M. Marcum's No. 1 Magnuson, SW SE SE Sec. 23-2-7.
S.D. 1,929 ft.; tools stuck; H.F.W.
J. D. Sledge and Jack Lynch's No. 1-A (twin) Thompson, SW NE SW Sec. 1-1n-7e.
Pulled 3,875 ft. of 6-in. csg.; flows 60 bbls. per day from Hunton lime topped at 3,830 ft.
Southern Oil Co.'s No. 1 Walker, NW NW SW Sec. 11-4-6.
Sand 785-816 ft.; 3,000,000 ft. of gas; S.D. 820 ft.

POTTAWATOMIE COUNTY

Howard Sherman et al's No. 1 Wingo, NE NW SE Sec. 32-10-5.
Rig.

SEMINOLE COUNTY

Ray Dorris and J. T. Hall's No. 1 Dorris, SE SE SW Sec. 31-10-7.
S.D. 500 ft.
Crabtree Drlg. Co.'s No. 1 Chandler, NE SE SW Sec. 4-5-6.
S.D. 110 ft.
Verser & Clay et al's No. 1 Thomas, NE SE NW Sec. 1-4-4.
S.D. at 2,802 ft.
Wofford Drlg. Co. et al's No. 1 Abbott, NE cor. Sec. 33-8-7.
Drlg. 1,910 ft.
Wofford Drlg. Co. et al's No. 1 Thomas, NW SE Sec. 8-6-7.
Dolomite 2,890 ft.; T.D. 2,917 ft.

TEXAS COUNTY (PANHANDLE)

Ben F. Ash et al's No. 1 Guymon Townsite, C NE SE Sec. 30-3n-15e; (Cimarron Meridian).
T.D. 2,420 ft.; fishing for drill pipe.

WASHITA COUNTY

Okla.-Midwestern Oil Co.'s No. 1 Deck, SW cor. Sec. 21-8-18w.
T.D. 2,430 ft.; lost tools in hole; rig rebuilt; S.D.
Anadarko Basin Oil Co.'s No. 1 Wolf, NE SW Sec. 23-9-17w.
Rigged up and S.D.

SOUTHERN OKLAHOMA
ATOKA COUNTY

Brookshire et al's No. 1 Rowland, NW NE NE Sec. 18-2-10
H.F.W. 3,844 ft.; P.B. 757 ft.; treated with acid; C.O.
Malernee et al's No. 1 D. O. K. Land Co., C SE SE Sec. 36-3s-13.
S.D. 3,115 ft.

BRYAN COUNTY

C. B. Welch's No. 1 Collins, NE NE Sec. 19-8s-8e.
Machine.

COMANCHE COUNTY

H. W. Baker's No. 1 Miller, SE SW SE NE Sec. 22-2-12w.
Drlg. 115 ft.
Oscar Jones' No. 1-A Sheetz, NE SW Sec. 26-3-16w.
Machine.
Henry Rosenthal et al's No. 1 Au-che-re-ah, NW NW NW Sec. 5-1n-9w.
Sand 1,479-93 ft.; bailed dry; filled 300 ft. with fluid in 24 hrs.; tools moved out.
F. F. Stevens' No. 1 Green, SE SW Sec 2-1-13w.
Drlg. 1,414 ft.
Heiden & Taylor's No. 2 Crutcher, C NE Sec. 11-1n-12w.
S.D. at 860 ft.

CARTER COUNTY

Waco Turner's No. 1 Munson, NE NW NE Sec. 35-5s-2w.
Rigging up rotary.
Carter Oil Co.'s No. 1 Carter-Williams, SW NE SW Sec. 27-2s-3w (7,000-ft. test).
Drlg. 4,521 ft.

HARMON COUNTY

Jud Leath et al's No. 1 McConnell, NW cor. Sec. 22-3-24w.
Building rig.

JACKSON COUNTY

Associated Oil Co.'s No. 1 Harrell, NE SW Sec. 13-1-21w.
S.D. 770 ft.
J. G. Buel et al's No. 1 Kizziar, SE SE NE Sec. 2-2n-22w.
Drlg. 472 ft.
Burk Royalty Co.'s No. 1 Gore, SE NW SE Sec. 3-1s-20w.
S.D. at 1,909 ft.
A. H. Emenheiser's No. 1 Morrell, SE SW SE Sec. 17-3n-21w.
S.D. 910 ft.
Golden & Cochran's No. 1 Duncan, NE cor. Sec. 34-2n-21w.
Drlg. 1,260 ft.
Gypsy Oil Co.'s No. 1 Stokes, SE NW SW Sec. 11-1-20w.
Lime 1,709-11 ft.; T.D. 1,722 ft.; S.D.
Jack Kilgore's No. 1 Wooldridge, SW SW NE Sec. 15-3n-21w.
Drlg. 330 ft.
Loper et al's No. 1 Conrad, NE cor. Sec. 35-1s-19w.
Drlg. 180 ft.
Palo Duro Oil Co.'s No. 1 Ealum, SW SW SE Sec. 16-2-21w.
T.D. 840 ft.; S.D. for power unit.
Selby Oil Co.'s No. 1 Hold, SE SW Sec. 15-2-20w.
Drlg. 1,382 ft.
Dick Scheig et al's No. 1 Cole, NE SE SE Sec. 4-1n-20w.
Drlg. 1,390 ft.
Triangle Oil Co.'s No. 1 Fox, C E½ W½ NW Sec. 11-3n-20w.
Spudded and S.D.
Whatley & Whatley's No. 1 Holt, NW SW SE Sec. 20-1n-20w.
S.D. 880 ft.

JEFFERSON COUNTY

Gypsy Oil Co.'s No. 1 James, SW SE SE Sec. 30-6s-6w.
R.U. standard tools.

JOHNSTON COUNTY

W. A. Delaney et al's No. 1 Diamond, NW NE SE Sec. 5-1s-8.
Drlg. 2,100 ft.

LOVE COUNTY

Amerada and Stanolind's No. 1 W. & D., NW SE SE Sec. 27-6s-5e.
T.D. 1,873 ft.; crooked hole; may skid rig for new hole.

MARSHALL COUNTY

Paul Robb's No. 1 Vittetoe, C NE SE Sec. 11-5s-4e.
Lime at 5,150-55 ft.; S.D. 5,160 ft.

McCURTAIN COUNTY

J. V. Scrivener et al's No. 1, NE SW SW Sec. 24-6s-21.
Machine.

MURRAY COUNTY

Equitable O. & G. Co.'s No. 1 Baer, SW NW NW Sec. 21-1s-3e.
Drlg. 60 ft.
Equitable O. & G. Co.'s No. 1 Scott, CSL N¼ NW SW Sec. 15-1s-3.
S.D. 1,500 ft.; H.F.W.
Manahan et al's No. 1 Ward, NE SE NW Sec. 18-3s-3; (Wilcox sand test).
Top of Bromide 1,166 ft.; U.R. 8-in. csg. to 1,410 ft.; T.D. 1,417 ft.
C. P. Williams et al's No. 1 Singleterry, SE SW NW Sec. 25-2s-3e.
T.D. 743 ft.; S.D.

STEPHENS COUNTY

J. W. Madison's No. 1 Tussey, SW SE NW Sec. 24-1n-4w.
Rig down, drill pipe in hole; T.D. 3,320 ft.

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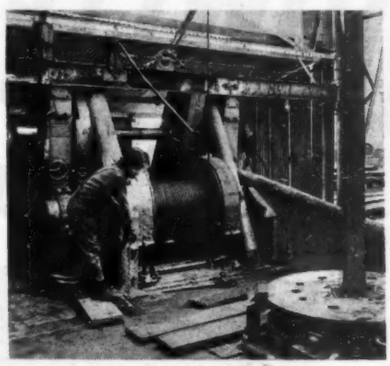

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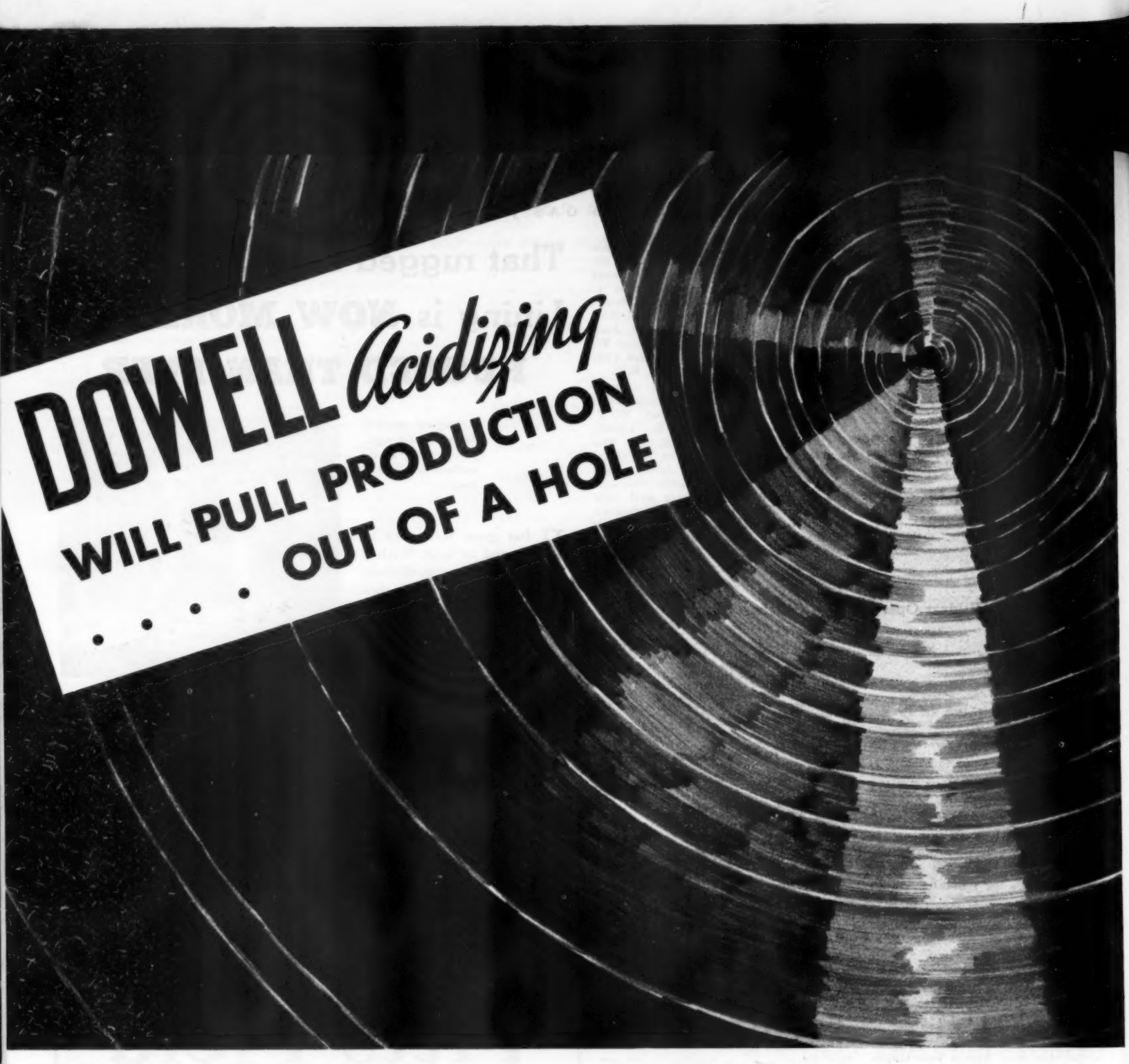

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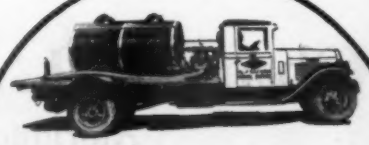

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OIL AND GAS WELL CHEMICAL SERVICE

Drilling Operations in Rocky Mountain District Increase With Better Weather Conditions

By TOLBERT R. INGRAM
Staff Correspondent, Rocky Mountain Area

DENVER, Colo., Mar. 18. — Drilling operations in the Rocky Mountain area are showing a substantial increase with the approach of spring and better weather.

In new Mexico, the Amerada Petroleum Corp.'s No. 1-D State, a wildcat in the Monument district in Lea County, was deepened to 3,954 feet and picked up some bottom water. It tested 724 bbls. of fluid in 25 hours with maximum cut of 19 per cent. Three completions and four new operations were reported in the Cooper Pool. Continental Oil Co.'s No. 13-A-2x Sholes, in the Jal Pool, which has been fighting water for more than a month, was completed for 360 bbls. initial. One completion, the Shell Petroleum Co.'s No. 1-B State, for 60 bbls. an hour, and three new locations, were reported in the Eunice Pool. Shell Petroleum Corp. spotted its No. 1 Turner in the Hobbs area, one-third of a mile east of production and one new location was made in the Jal Pool. The Texas Co.'s No. 1 Moore, in the Lea area, is again shut down for orders after drilling deeper and getting more water. Eddy County had two new locations northeast of the Artesia Pool. Flynn, Welch & Yates have a near completion in their No. 71 State. C. J. Frank and others' No. 1 Roswell Insurance, a wildcat in Chaves County, was completed as a small gas well. Sale of leases on 21,816 acres of state land brought $24,758 in bonuses.

Colorado had one completion in the Iles Field in the Stanolind Oil & Gas Co.'s No. 35-SD Parkinson for 1,440 bbls. initial.

Wyoming has a new oil field in Fremont County in the Mid-American Oil Co.'s No. 2 Government, on the Sheep Creek structure, which is slopping over at 2,195 feet, 3 feet in the pay. Ohio Oil Co. spotted one new well on the Byron Dome and another in Lance Creek. Ohio Oil Co.'s No. 1 Kyle, in the Medicine Bow district in Carbon County, showed 51 gravity crude in a drill stem test in the Muddy at 4,850 feet. Conway Oil Co.'s wildcat on Beaver Creek in Weston County has 225 feet of oil in the hole.

One completion was reported in the Cut Bank Field in Montana, in the Montana Power Gas Co.'s No. 1 O'Brien for 236 bbls. initial.

Utah Southern Oil Co. will test a 60,000-acre block in Grand County, Utah.

NEW MEXICO

Lea County

Pipe line runs from Lea County pools in February, in barrels, were as follows:

	Bbls.
Eunice	176,660
Cooper	109,124
Lea	37,627
North Lea	566
Jal	99,797
Hobbs	858,650
Total	1,282,424

February runs from the Hobbs Pool brought the total since proration went into effect up to 54,323,957 bbls.

Monument Area

Amerada Petroleum Corp.'s No. 1-D State, C NW NW Section 1-20-36, 7 miles north of the Eunice Field, which opens a new oil pool, was deepened to 3,954 feet and encountered some water at 3,952-54 feet. It was tested through the 3-inch tubing with the aid of gas lift and gauged 724 bbls. first 25 hours. The maximum cut showed 19.8 per cent basic sediment and 2 per cent water, and the minimum cut showed 8 per cent basic sediment and 1 per cent water. In the second 24 hours it flowed 736 bbls. natural and then stopped. In the last five hours of the test it made 137 bbls. The water will be plugged off and the well further tested before completing. The oil tests 32 gravity on the Baume scale. Acreage in the vicinity of the well is held by the Texas Co., Gypsy Oil Co., Superior Oil Co., Shell Petroleum Corp., Repollo Oil Co., Ohio Oil Co., Sun Oil Co., Skelly Oil Co. and the Continental Oil Co.

Cooper Area

Three completions and four new operations were reported in the Cooper area.

The Amerada Petroleum Corp.'s No. 2 Everett, C SE SW Section 26-24-36, was completed at 3,438 feet from the pay at 3,425-38 feet and gauged 878 bbls. in 7½ hours through a 1½-inch choke on the 2½-inch tubing at 3,420 feet, with 1,500,000 feet of gas. The elevation is 3,305 feet.

The Texas Co.'s No. 5 Ogg, C NW SE Section 35-24-36, flowed 60 bbls. an hour through the 2½-inch from the pay at 3,402-55 feet, the latter also being the total depth. The gas was estimated at 500,000 feet. The 7-inch was cemented at 3,402 feet and the tubing was run to 3,445 feet. The elevation is 3,275 feet.

Phillips Petroleum Co.'s No. 12 Woolworth, C NE SW Section 26-24-36, flowed 64½ bbls. an hour on a four-hour test from the pay at 3,485-90 feet, the latter also being the total depth, the gas being estimated at 670,000 feet. The 7-inch was cemented at 3,461 feet and the tubing was run to 3,487 feet. The elevation is 3,317 feet.

Empire Gas & Fuel Co.'s No. 4 Everett, C SW SW Section 35-24-36, a first report, is digging cellar and pits. This operation gives Section 35 13 drilling wells and producers, leaving only three 40-acre units on the east side of the section to be drilled. General Crude Oil Co.'s No. 1 Woolworth, C NW SE Section 26-24-36, another first report, is digging cellar and pits. Phillips Petroleum Co.'s No. 13 Woolworth, C SW NW Section 26-24-36, a first report, began spudding March 1, set the 12½-inch at 216 feet with 150 sacks, and is drilling at 550 feet in red beds. Same company's No. 14 Woolworth, C NW SW Section 26-24-36, began spudding March 3, and set the 12½-inch at 208 feet with 150 sacks.

The Texas Co.'s No. 4 Ogg, C NW NW Section 35-24-36, is a near completion at 3,430 feet. It had gas at 3,328-48 feet and oil at 3,412-20 feet and is drilling ahead. Same company's No. 6 Ogg, C SW SE Section 35-24-36, began spudding March 5 and stopped at 174 feet in red beds to cement the 12½-inch at 167 feet with 175 sacks. Simms Oil Co.'s No. 1 Woolworth, C SE NE Section 35-24-36, is bottomed at 3,406 feet and is waiting on cement after recementing the whipstock at 3,275 feet to drill by drill pipe. Continental Oil Co.'s No. 15-A-1 Vaughn, C SE SE Section 15-24-36, which tested 5 bbls. an hour at 3,520 feet, is drilling at 3,533 feet in lime and had an increase in oil at 3,520-30 feet, making 40 bbls. an hour with 2,900,000 feet of gas under drilling pressure. This is an outside well at the northwestern end of the development. Humble Oil & Refining Co.'s No. 2 Coats, W NW NE Section 10-24-36, topped the anhydrite at 1,324 feet, set the 8⅝-inch at 1,360 feet with 275 sacks, and is drilling at 1,390 feet in anhydrite. The elevation is 3,385 feet. This well is located 2 miles north of production and is being drilled as a relief well for No. 1 Coats, in which gas caught fire and damaged the hole. Empire Gas & Fuel Co.'s No. 3 Everett, C NW SW Section 35-24-36, spudded March 4 and set the 12½-inch at 162 feet with 100 sacks, and its No. 2 Everett, C SE SW Section 35-24-36, was drilled to 3,490 feet and set the 7-inch at 3,415 feet with 150 sacks. Last named made 2½ bbls. of fluid an hour for six hours, of which 85 per cent was water. It ran packer at 3,450 feet to test below the packer. Stanolind Oil & Gas Co.'s No. 4-A Meyers, C NE SW Section 22-24-36, an edge well on the west side, is still testing at 3,560 feet after plugging back from 3,608 feet. It is flowing into the pits and the fluid is mostly water. It was not gauged.

Jal Area

The Continental Oil Co.'s No. 13-A-2x Sholes, NW cor. SE Section 13-25-36, which has been fighting water for more than a month, was listed as a completion. It is a south and east offset to producers. It was plugged back from 3,325 feet to 3,313 feet and gauged 360 bbls. the first 24 hours through a one-sixteenth-inch choke on the 2½-inch at 3,313 feet, of which 19 per cent was water and 5 per cent was basic sediment. The gas was estimated at 1,000,000 a day. The pay was at 3,280-3,313 feet and the elevation is 3,149 feet.

Phillips Petroleum Co.'s No. 1 Worth, C NE NE Section 3-25-36, 1½ miles northwest of the nearest producer and which ties the Jal Pool with the Cooper Pool, will be completed at present total depth of 3,497 feet. It flowed 234 bbls. in nine hours through the 2½-inch at 3,477 feet. The 7-inch was cemented at 3,478 feet with 400 sacks.

One new operation was reported in the Southern Petroleum Exploration Co.'s No. 1-B Ascarate, C NE SW Section 24-25-36, which is rigged and ready to spud. It is a south offset to its No. 2-A Ascarate, and an east offset to Barnsdall's No. 1 Forest.

Hammond, Inc.'s No. 1 Sholes, SE cor. NW Section 13-25-36, is bottomed at 1,767 feet in salt and is waiting after cementing the 8¼-inch at 1,764 feet with 1,350 sacks. The same company's No. 2 Sholes, NE cor. NW Section 13-25-36, is shut down at 145 feet. R. H. Henderson and others' No. 1 Langley, C SE SE Section 8-25-37, a wildcat 2½ miles east of production, is bottomed at 1,240 feet in salt and waiting after cementing the 8¼-inch at 1,205 feet with 66 sacks. The top of the salt is at 1,205 feet and the elevation is 3,162 feet. Repollo Oil Co.'s No. 2 Gloyd, NW cor. SE Section 12-25-36, is drilling at 3,180 feet in lime, and the Texas Co.'s No. 1 Parker, C SW SW Section 29-26-37, is drilling at 1,230 feet in anhydrite. Trinity Drilling Co.'s No. 1 Sholes, C NE NE Section 24-25-36, set the 9⅝-inch at 1,477 feet and is drilling at 1,685 feet in anhydrite. The 12½-inch was cemented at 157 feet with 100 sacks.

H. Boyd, acting chief scout for Magnolia Petroleum Co., Dallas, Texas

Eunice Area

One completion and three new locations were reported in the Eunice Pool.

The Shell Petroleum Corp.'s No. 1-B State, C NW NW Section 29-21-36, was completed at 3,973 feet and flowed 60 bbls. an hour through a three-fourths-inch choke on the 2½-inch tubing with 2,700,000 feet of gas after being treated with 2,000 gallons of acid. The pay was at 3,900-72 feet, the 7-inch at 3,900 feet and the tubing at 3,972 feet. The elevation is 3,655 feet.

The three new locations were made by Continental Oil Co. and are all offsets. These are No. 18-A-2 Meyers, C NW SE Section 18-21-36, spudding at 160 feet; No. 9-B-3 Meyers, C SE NW Section 9-21-36, location; and No. 8-B-2 Meyers, C NE NW Section 8-21-36, cellar dug.

Humble Oil & Refining Co.'s No. 2-B State, C SE NW Section 29-21-36, is drilling at 3,348 feet in lime, and Gypsy Oil Co.'s No. 4 Bell-Ramsey, C NW NW Section 9-21-36, began spudding March 4 and is drilling at 365 feet in red beds. Skelly Oil Co.'s No. 2-B State, C SW NW Section 16-21-36, is spudding. The Repollo Oil Co.'s No. 1 Adkins, NW cor. SE Section 9-21-36, had gas at 3,525 feet and is drilling at 3,685 feet in lime. The Atlantic Oil Co.'s No. 1-C State, C SW SE Section 5-21-36, is drilling at 3,662 feet in lime, and the Shell Petroleum Corp.'s No. 1-A State, C SE NE Section 12-21-35, is standing at 3,990 feet after acidizing with 2,000 gallons. Continental Oil Co.'s No. 20-C-3 State, C SE NW Section 20-21-36, began spudding March 3, set the 10¾-inch at 172 feet with 75 sacks and is drilling at 174 feet in red beds. Same company's No. 9-B-2 Meyers, C SE NW Section 9-21-36, is bottomed at 1,595 feet in anhydrite and waiting after cementing the 7⅞-inch at 1,592 feet with 400 sacks. Same company's No. 30-A-1 Lockhart, C SE NE Section 30-21-36, is flowing into the pits at 3,957 feet, total depth. No gauge has been taken but the fluid is estimated at 21 per cent water.

Hobbs Area

Another test located one-third of a mile out from the nearest producer is to be drilled in the Hobbs area in the Shell Petroleum Corp.'s No. 1 Turner, SW cor. NE Section 34-18-38, on the southeastern side of the pool. It is moving in materials. This well was spotted one-third of a mile east of Skelly's No. 1 Turner and is a north offset to Noble's No. 1 Townsite, a drilling well. This area was looked upon as doubtful territory three or four years ago and structural maps drawn as late as 1932 do not show the contours running north from the new Shell location. However, each

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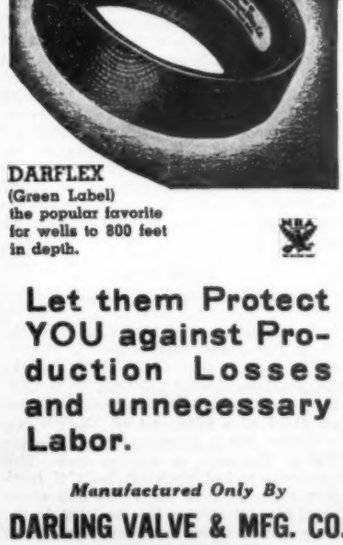

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well drilled out a little farther in this direction for the past two years has encountered commercial production. Recently J. P. Cusack's No. 1 Moon, in Section 27-18-38, to the north of the new location, was completed for better than 7,000 bbls. initial.

Noble and others' No. 1 Townsite, W NW SE Section 34-18-38, is drilling at 3,410 feet in lime, and Noble & Co.'s No. 3-C State, NE NW SW Section 24-18-37, is drilling at 2,530 feet in salt. Shell Petroleum Corp.'s No. 2-D State, C NE NW Section 24-18-37, is drilling at 3,130 feet in anhydrite. The National Securities Oil Co.'s No. 1 Linam, NE SE SW Section 33-18-37, is drilling at 4,354 feet in lime.

Lea Area

The Texas Co.'s No. 1 Moore, C NW SE Section 21-20-32, a wildcat drilled on a seismograph high west of the Lea Pool, which had 500 feet of sulphur water at 2,885 feet, did not improve conditions by drilling deeper and is shut down for orders at 3,019 feet in lime. It had 2,400 feet of sulphur water at 2,980-90 feet. Same company's No. 1 Cole, C NE NE Section 35-19-33, began spudding March 1, set the 12½-inch at 72 feet with 60 sacks, and is drilling at 400 feet in red beds. R. H. Henderson and others' No. 1 Russell-Steele, C NE NW Section 24-20-33, is drilling at 3,250 feet in lime, and the Argo Royalty Co.'s No. 1 Burner, SW NE NE Section 6-20-32, is drilling at 2,455 feet in salt. The Ryan Consolidated Petroleum Corp.'s No. 1 Acree, C NE NW Section 35-20-32, is drilling at 3,318 feet in lime, and Anderson & Prichard's No. 1 Fisher, C SE NE Section 8-20-35, is drilling at 297 feet in red beds.

San Simion Area

Humble Oil & Refining Co.'s No. 1 Saunders, C NE NE Section 4-22-34, is bottomed at 2,052 feet in anhydrite and underreaming the 10-inch.

Nadine Area

Repollo Oil Co.'s No. 1 Arnold, SW NW SE Section 11-20-38, has rotary rigged up and is ready to drill deeper from 464 feet.

Maljamar Area

Maljamar Oil & Gas Co.'s No. 1 Miller, C NW SW Section 23-17-32, is drilling at 470 feet in red beds.

Roosevelt County

The Claudell Development Co.'s No. 1 Wilmes, C SW SE Section 21-2s-30, Pomeroy district, is bottomed at 3,628 feet in sand and waiting after cementing the 5⅞-inch at 3,613 feet with 170 sacks. The corrected top of the Glorietta is 3,623 feet. It had a show of oil through 3,000 feet of water before running casing.

There is a growing increase of interest in Roosevelt County. Wirt Franklin, of the Franklin Oil Co., arrived at Clovis the past week with Glen Grimes, chief geologist for the company, and G. C. Sweet, of the American Seismograph Co., to begin a survey of the district. Several trucks carrying equipment preceded them and the crew is composed of 12 men. Homer F. Wilcox, of Tulsa, also is reported blocking up acreage.

Eddy County

Two new locations were reported in Eddy County to the northeast of the Artesia Pool. Premier Petroleum Corp.'s No. 1-E Dexter, C NW NE Section 20-17-30, Maljamar area, is building derrick, and the Barnsdall Oil Corp.'s No. 2 Dowd, C NE SE Section 22-17-29, Jackson area, is a location.

Flynn, Welch & Yates' No. 71 State, C SW NE Section 10-19-28, Artesia area, is a near completion at 2,075 feet, total depth. It had a show of gas in the lime at 1,950 feet and at 1,985-2,003 feet oil rose 1,400 feet in 24 hours. Fred Brainard's No. 1 Brainard, E NW NE Section 2-17-28, began spudding February 25, set the 12½-inch at 30 feet, topped the salt at 246 feet and is drilling in salt at 260 feet. The elevation is 3,040 feet.

Getty Oil Co.'s No. 7 Dooley, SW cor. NW Section 24-20-29, Getty Pool, is coring in lime at 1,472 feet. A drill stem test at 1,325-60 feet showed 200 feet of fluid and another at 1,403-44 feet showed 435 feet of salt water in one and one-quarter hours. Neil Wills' No. 1 Levers, C NW NE Section 35-20-28, southwest of the Getty Pool, set the 10-inch at 105 feet and is drilling at 155 feet in red beds.

The Coronado Exploration Co.'s No. 1 Anderson, C NE NW Section 13-20-23, Seven Rivers district, set the 6⅝-inch at 800 feet and is drilling in lime at 885 feet.

The Malco Refiners, Inc., refinery at Artesia has resumed operations after being shut down to install a late type of agitator which has doubled its treating capacity.

Valencia County

The Western Natural Resources Corp., Inc.'s No. 2 fee, SE cor. Section 5-6n-1e, San Clemente grant, is bottomed at 6,001 feet and trying to run the 6⅝-inch to 5,600 feet.

Chaves County

C. J. Frank and others' No. 1 Roswell Insurance, NE cor. SE Section 30-11-25, Roswell district, was completed at 996 feet as a small gas well. It had gas with a show of oil at 955-96 feet and acidized it three times. It is rated at 25,000 feet a day and gas probably will be used by farmers in the vicinity of the well.

Guadalupe County

Anton Chico Development Co., Ltd.'s No. 2 fee, NW NE SW Section 20-9n-17, is spudding at 300 feet.

Santa Fe County

Elmer Fisher's No. 1 Hill, Section 6-10n-7e, Barton district, is drilling at 2,640 feet in gray lime after being delayed by bad weather and changing drilling line.

San Juan County

Nick Spatter's No. 1 fee, C NE SW Section 32-31-11, Aztec district, landed the 8¼-inch at 1,238 feet for formation shutoff and is drilling ahead at 1,268 feet. Continental Oil Co.'s No. 42, SW NE NW Section 12-29-19, Rattlesnake Pool, had a show of oil and gas at 810 feet and is drilling at 813 feet.

Union County

Sierra Grande Oil Co.'s No. 1 Rogers, C NE SW Section 4-29-29, Sierra Grande Arch, set the 15½-inch at 452 feet and is shut down at 970 feet for the 12½-inch.

State Land Sale

The auction of oil and gas leases on state land at Santa Fe on March 10 resulted in high bids aggregating $24,758.28 on 21 tracts comprising 21,816 acres. There were no bids on five tracts and two tracts, Nos. 4 and 21, were sold at the minimum after the auction. High bids were as follows:

Tract 1—1,276 acres in Townships 22, 23 and 24s, Ranges 32 and 33e, Roy G. Barton, Clovis, $206.

Tract 2—6,352 acres in 12s-34 and 35e, William D. Morris, Fort Worth, $8,170.

Tract 3—1,400 acres in 12, 13 and 14s-34, 35 and 36e, Phillips Petroleum Co., $1,820.

Tract 4—880 acres in Sections 2, 12, 13, 16 and 36-14s-34, Ed W. Owen, San Antonio, $220.

Tract 5—1,079 acres in Sections 3, 4, 5 and 8-14s-35, Shell Petroleum Corp., $1,403.77.

Tract 6—479 acres in 14s-35, 36 and 37e, Shell Petroleum Corp., $1,438.77.

Tract 7—3,120 acres in Sections 8, 9, 10, 11 and 12-16s-33, Phillips Petroleum Co., $1,123.70.

Tract 8—2,480 acres in Sections 13, 14, 23 and 24-16s-33, Ohio Oil Co., $892.80.

Tract 9—1,600 acres in Sections 1, 2, 3, 4, 10 and 11-16s-34, Ohio Oil Co., $1,056.

Tract 10—280 acres in Sections 21 and 28-18s-33, Southern Petroleum Exploration Co., $480.

Tract 12—282 acres in Section 2-20s-29, W. C. Duncan, Wichita Falls, $105.

Tract 13—384 acres in Sections 12, 13, 15, 16, 18 and 30-19s-29, Francis H. French, Davenport, Iowa, $131.

Tract 14—80 acres in Sections 24-17-34 and 10-18-37, Phillips Petroleum Co., $1,280.

Tract 15—601 acres in Sections 3, 4 and 10-18s-34, Texas Co., $1,812.44.

Tract 18—238 acres in Sections 9-18-36 and 6-18-37, Gypsy Oil Co., $1,000.

Tract 20—280 acres in Section 12-19-35, Humble Oil & Refining Co., $1,610.

Tract 21—400 acres in Section 23-19s-35, Green Oil Co., $400.

Tract 22—200 acres in Section 34-19s-35, W. E. Lee, Roswell, $226.

Tract 24—80 acres in Section 17-19-38, Francis H. French, $166.

Tract 25—160 acres in Sections 26 and 28-18-37, Texas Co., $168.80.

Tract 26—160 acres in Section 30-25-38, Ohio Oil Co., $1,048.

COLORADO

Moffat County

Stanolind Oil & Gas Co. had a good completion in its No. 35-SD Parkinson, SE cor. NE Section 22-4n-92, Iles Dome. It topped the Sundance formation at 3,344 feet, cemented the 8¼-inch at 3,346 feet with 300 sacks, topped the pay at 3,371 feet and completed it in sand at 3,381 feet. It made an average of 59 bbls. an hour for six hours, through the tubing, or at the rate of 1,440 bbls. a day. Same company's No. 28-x Parkinson, NE SW SW Section 22-4n-92, is rigging up rotary.

Boulder County

Leslie R. Steele and others' No. 1 Maxwell, SW NE NW Section 24-1n-71, Boulder district, is fishing at 340 feet.

Park County

South Park Oil Co.'s No. 1 State, SE cor. SW Section 16-11-75, Hartsel district, landed the 10-inch at 890 feet and is cleaning out at 1,225 feet, 25 feet off bottom.

Prowers County

Trojan Oil & Gas Co.'s No. 1 Lotus

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Oil, NW NE NE Section 15-23-46, Lamar district, is bottomed at 4,958 feet and is drilling out cement 25 feet off bottom after cementing hole at 4,851-4,943 feet to stop caving.

WYOMING

Fremont County

A new oil field for Wyoming is in prospect as a result of an important discovery in the Mid-American Oil Co.'s No. 2 Government, C NE SW Section 14-28-92, on the Sheep Creek structure in the southeastern corner of Fremont County, to the northwest of the Lost Soldier Pool and 53 miles northwest of Rawlins. The hole is bottomed about 3 feet in a pay in the Embar formation at a total depth of 2,195 feet and at last reports the oil was slopping over the top. The crude is estimated at about 30 gravity. The company, a subsidiary of the Mid-American Oil Co., Ltd., of Toronto, Canada, and of which Harold L. Nutting is president and general manager, has been prospecting in the Sheep Creek area for some time. Last year it drilled in the S NE SW Sections 4-28-92, topped the Embar at 2,530 feet and abandoned the hole at 3,460 feet, being still in that formation. The formations in this test ran much deeper than expected and the rig was skidded 2½ miles to the southeast and No. 2 Government began spudding last November. The results in this well indicate that it is approximately 1,250 feet higher than at the other location and assures a closure of around 1,000 feet with approximately 5,000 acres on the inside. Previous to the drilling of these two tests the Union Oil Co. of California drilled in the SE SW SE Section 10-28-92. This well topped the red beds at 737 feet and was still in that formation when it was abandoned at 3,905 feet. It was apparent that the formations tipped at a sharp angle in the first two tests and the rig for No. 2 Government was moved to the southeast of both of these wells with the results noted. It is too early to do more than estimate the capacity of the discovery, but E. W. Krampert, who with Al Barrett, acted as consulting geologist in the drilling of the well, says that it probably will make somewhere between 1,000 and 2,000 bbls. a day. The property is under lease from W. R. Weeks, of Denver, George E. Bremmer, of Cheyenne, and B. H. Offutt, of Rawlins. President Nutting says the Mid-American is making plans to drill six more wells in the field in a short time.

Big Horn County

One new location was reported in the Byron Field in the Ohio Oil Co.'s No. 2 Sidon Canal, SW cor. Lot 40, Section 24-56-97, which will go to the Tensleep. Crosby & Huntington's No. 1 Denio, Tract 43-C, Section 15-55-97, is bottomed at 3,000 feet and drilling out cement after going back and recementing the 13⅜-inch at 1,083 feet. Taylor Oil Co.'s No. 1 Hoskins, SE SE Section 26-56-97, is gradually recovering lost drill stem at 5,275 feet, total depth.

The Yale Corp.'s No. 1 Blakesley, NE NW Section 28-49-91, Bonanza district, cemented the 10-inch at 1,130 feet and is drilling at 1,156 feet. The Wyoming Oil & Refining Co.'s No. 1 Evans, NE cor. NW Section 12-49-91, Paintrock structure, is rigged and ready to spud, but will not begin drilling until spring. The California Exploration Co.'s No. 1 Government, C SW SW Section 4-54-94, Spence district, is drilling at 417 feet. J. W. Bales' No. 1 Parker, C SW SW Section 23-49-89, Ziesman Dome, is preparing to resume at 125.

Carbon County

Ohio Oil Co.'s No. 1 Kyle, NE SE NE Section 26-21-79, Medicine Bow district, a joint operation with the California Co., which is a rotary test to the Sundance, expected at around 6,000 feet, made a drill stem test at 4,840-51 feet in the Muddy and in one hour yielded two joints of high grade crude testing 51 gravity on the Baume scale. The tester was dropped and then recovered and coring ahead is in progress. Several tests have been drilled on this structure and present location was made on a seismograph high. In 1923, the Southwestern Petroleum Co. drilled in the NW cor. SW Section 25 and had an initial production of 975 bbls. in the Muddy at 4,035 feet, but was drowned out by water upon going deeper. The Dakota at 4,860-87 was dry and the Lakota had water at 4,968 feet. Producers & Refiners Corp. also had oil in the Muddy in a test on the NW SW NW Section 25, but it did not hold up. None of these wells tested the Sundance, the objective in the drilling well.

Earl W. Reeder, Inc.'s No. 1 Whitford, SW SE SE Section 24-20-84, Overland Dome, set the 10-inch at 3,595 feet, on top of the General Petroleum series, changed over to cable tools and was bailing when the pipe collapsed at 2,300 feet. It is swedging. The Ohio Oil Co.'s No. 1 Morris, C NW SE Section 6-20-77, Diamond Dome, is drilling at 7,050 feet and is still in red beds and getting deep. The Argo Oil Co.'s No. 1 Johnson-Union Pacific, NE cor. SE Section 5-24-87, shot sand at 2,829-35 feet and is cleaning out to test. It was plugged back from 3,500 feet.

Converse County

E. B. Jones and others' No. 1 Jebel, C N half Section 17-32-69, Shawnee district, is spudding to go to the gas sand at 600 feet for additional fuel for deep test.

Natrona County

Bessemer Oil Co.'s No. 8 Government, SW cor. NW Section 18-33-82, Poison Spider, set the 8⅝-inch at 1,393 feet and is drilling in at 1,400 feet.

Niobrara County

The Lance Creek Field, in which the upper Sundance has been proven in two wells, promises to be an active area this summer. Ohio Oil Co. made a new location in its No. 6 Converse Sheep, C SE SE Section 32-36-65, a little to the east of the Sundance discovery well, and is preparing to deepen from 2,952 feet to the Sundance its old well, No. 2, NE NW NE Section 5-35-65. Last named is in the southwestern part of the field where the Sundance has not been tested. The Ohio Oil Co.'s No. 2 Rohlf, near C NE SE Section 32-36-65, is coring at 3,850 feet in the Sundance. Last named is first well in the field to go to the lower Sundance which is the best of the three benches in that formation in Salt Creek. Continental Oil Co.'s No. 1 Apex-3, SW NE SW Section 34-36-65, is cleaning out at 3,510 feet.

Park County

Rocky Mountain Gas Co.'s No. 1 Oregon Basin Oil & Gas, C SW NW Section 32-51-100, South Oregon Basin, is drilling at 1,330 feet in shale.

Washakie County

Wyoming Oil & Refining Co.'s No. 1 Frison, NW SW NW Section 14-48-91, Hidden Dome, is drilling at 1,035 feet.

Weston County

Conway Oil Corp.'s No. 1 Government, C SE NW Section 7-41-60, Dewey district, has an oil show at around 1,400 feet, the oil rising 225 feet over night. It will drill deeper and if nothing better is found it will plug back and shoot. The horizon is not named, but it was reported through the Morrison at 750 feet. The Dakotas had a big flow of artesian water.

MONTANA

Glacier County

Operations in Montana are showing an increase as wells shut down for the winter begin resuming. One completion was reported in the Cut Bank Field in the Montana Power Gas Co.'s No. 1 O'Brien, C SE SE Section 31-34-5w, close to the line between the oil and gas area on the east side. It was drilled to 2,780 feet and cut the pay at 2,760-77 feet. It swabbed 236 bbls. the first 24 hours, 160 bbls. in the second period and 129 bbls. the next 18 hours. Rods and tubing are being run.

Fist and others' No. 1 Danen, Lot 10, Block 11, Section 12-33-6w, in the town of Cut Bank, which was reported a completion last week for 10 bbls. at 2,987 feet, may be drilled deeper to test the Madison.

Askins' No. 1 Askins, Lot 24, Block 33, Section 12-33-6w, is drilling at 800 feet. Consolidated Gas Co.'s No. 3 Tribal, NE NW NW Section 34-35-6w, topped the Colorado at 575 feet, and cemented the 10-inch at 586 feet with 50 sacks, and its No. 4 Tribal, NE SW NE Section 34-35-6w, is repairing sand reel at 1,760 feet. Gardner-Smith's No. 1 Tweedy, NE NE Section 36-33-6w, has rig up. Indian Oil Co.'s No. 2 Winkler, W SW SW Section 23-35-6w, which shut down last November at 2,585 feet, is preparing to resume. Kately & Kaup's No. 1 Drumheller, Lot 1, Section 10-34-6w, topped the Colorado at 545 feet and cemented the 10-inch at 596 feet with 65 sacks. Olive Oil Co.'s No. 3 Winkler, NE NW Section 35-35-6w, is drilling at 2,350 feet, and R. C. Tarrant's No. 1 Connolly, C NE SE Section 31-34-5w, is drilling at 1,900 feet.

Liberty County

John Wilde's No. 2-A Mahoney, SE SW Section 23-37-4e, Whitlast district, is drilling at 378 feet, and J. H. Hamilton and others' No. 1 Northern Farms, C NE SW Section 10-37-5e, Flat Coulee, has resumed after being shut down for the winter and is drilling at 2,350 feet.

Choteau County

Mills & Decker's No. 1, NE NW Section 29-27-13, Little Sandy, is rigging up cable tools. H. H. Havens has the contract.

Fergus County

S. W. Pennock and others' No. 1 Nordheim, NW NE NE Section 6-21-18, Scharf district, is drilling at 500 feet.

Phillips County

Guy Norman's No. 1 Pewitt, E SE NW Section 20-24-24, Guinn district, is drilling at 445 feet.

Pondera County

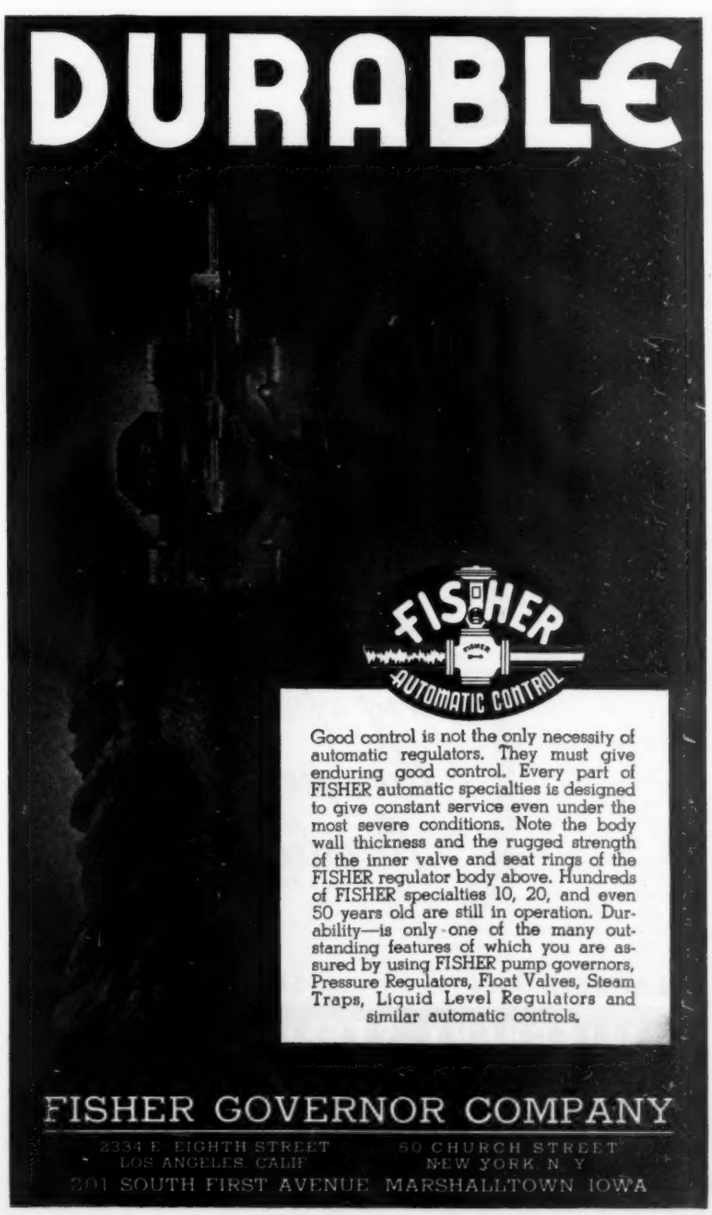
Perry Withers' No. 1 Gjuillin, NW cor. SE Section 11-27-4w, Pondera Field, is drilling at 1,100 feet, and W. M. Fulton's No. 1 Erickson, SW cor. NW Section 10-27-4w, spudded and shut down.

Tool County

W. M. Fulton and others' No. 1 Halter, NE cor. SE Section 17-35-2w, Kevin-Sunburst Field, landed the 6⅝-inch at 1,575 feet in black lime, and Monopeg Oils, Ltd., No. 3 Dipple, SW NW Section 28-35-1w, is drilling at 905 feet.

UTAH

The Utah Southern Oil Co., which has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been a consistent wildcatter in eastern Utah, has taken operating contracts from 25 permittees upon approximately 60,000 acres in the vicinity of Cisco, in Grand County, and expects to put down a test, based on geological and geophysical work done the past two years. The Diamond Oil Co.'s No. 4, SE NW Section 16-8s-5e, Utah County, is drilling at 3,650 feet.

Kansas Fields

(Continued from Page 69)

2w. Shell Petroleum Corp. and Lario Oil & Gas Co., deepening No. 4 Hill, NW NE SE Section 23-19-2w from 3,384 feet, found Wilcox sand at 3,420 feet and the crew was drilling ahead.

The Texas Co., deepening No. 1 Nachtigel, SW SE SW Section 21-21-3w, Voshell Pool, from 3,437 feet to Siliceous lime at 3,500-03 feet, total depth, had a hole full of oil. Marathon Oil Co., deepening No. 6 Duerkson, SE NE NE Section 19-22-3w, from 3,485 feet, found the base of the Hunton lime at 3,503 feet and the crew was cleaning out at a total depth of 3,513 feet.

Lario Oil & Gas Co.'s No. 1 Schrag, NW SE NW Section 22-19-4w, a wildcat, was abandoned at 3,889 feet. It was a hole full of water from Siliceous lime at 3,080-89 feet.

Ellsworth County

Bradley, Scanlon and others made a location for No. 2 Mohrer, NW SE SE Section 14-17-9w, in Ellsworth County, following the favorable performance of their No. 1 Mohrer, C NE SE SE Section 14-17-9w, which filled up to the top of the hole with oil in 30 minutes from Siliceous lime at 3,194-99 feet. No. 1 had not been given a production test.

Stanolind Oil & Gas Co. and Gypsy Oil Co.'s No. 3 Frevert, CNL NE SE NE Section 21-16-10w, filled 3,000 feet with oil in two hours from Siliceous lime at 3,330-37 feet. Later it swabbed 80 bbls. in one hour.

Rice County

Sinclair Prairie Oil Co. completed No. 5 Volkland, SW SW SE Section 20-19-9w, in Rice County. It pumped 647 bbls in 15 hours from Siliceous lime at 3,202-23 feet.

Sinclair Prairie Oil Co.'s No. 2 Wallace, SE NE SW Section 29-19-9w, filled up 1,600 feet with oil in 11 hours from Siliceous lime at 3,215 feet, total depth 3,245 feet.

Lebow and others' No. 1 Doll, SE SE SW Section 20-19-9w, deepened from 3,245 feet to 3,257 feet, pumped 30 bbls. per hour.

New work in Rice County included Sinclair Prairie Oil Co.'s No. 6 Volkland, NW SE SE Section 20-19-9w, a location. Empire Oil & Refining Co.'s No. 5 Proffitt, SW NE SE Section 6-20-9w, cellar, and No. 6 Proffitt, NE SW SE Section 6, a location; Gypsy Oil Co.'s No. 8 Christopher, NW NW NE Section 6-20-9w, location; No. 9 Christopher, SW SE NE Section 6, building rig, and No. 10 Christopher, SE SW NE Section 6, rigging up; Empire Oil & Refining Co.'s No. 9 Heckel, SW NE SW Section 18-20-9w, building a rig.

Russell County

Sinclair Prairie Oil Co.'s No. 2 Heffernan, SW NW NE Section 26-15-13w, Russell County, was a hole full of oil from Siliceous lime at 3,265-68 feet.

Texas Co. completed No. 1 Holland, SW NW SW Section 13-14-15w. It produced 907 bbls. of oil and 25 bbls. of water from Siliceous lime at 3,249-56 feet, which had been acidized.

Phillips Petroleum Co. had a hole full of oil in No. 2 Holland, NW SW SW Section 13-14-15w, from Siliceous lime at 3,228-34 feet. It filled up in 12 hours.

Lario Oil & Gas Co. and the Texas Co.'s No. 1 Boxberger, NW cor. Section 24-14-15w, had Siliceous lime at 3,252-53 feet, total depth. It pumped 515 bbls. of oil in 24 hours without the use of acid.

Allison and others abandoned the location for No. 1 Dumler, in NW of Section 22-13-14w.

Tom Palmer's No. 6 Killian, 1,590 feet from west and 410 feet from south lines of NW quarter Section 27-13-14w, had 2,700 feet of oil in the hole from Siliceous lime at 3,288-92 feet.

Sinclair Prairie Oil Co. completed No. 3 Brumgardt, SE SW SW Section 31-12-15w. It pumped 108 bbls. in 24 hours from Oswald lime at 3,002-73 feet, which had been acidized.

New work in the county include Skelly Oil Co.'s No. 1 Gurney, NE NE SW Section 23-14-14w, moving in material: J. J. Hall and others' No. 1 Miller, SE SW SE Section 30-14-13w, rigged up to drill deeper.

Boyle and Grossman made a location for a wildcat test in Ellis County, No. 1 Yost, C SW SW Section 23-17-18w.

Central West Fields

(Continued from Page 71)

initial of 33 bbls. at a total depth of 3,702 feet.

In Medina County, Glen Yannayon's test on the Frank Ulrick farm, Lot 19, York Township, is a light gas well at 233 feet. McCullen & Dempsey are drilling No. 3 Davis & Ferguson farm, Lot 3, same township.

In Licking County, Armbruster & Stricker's No. 7 on the Homer L. Jones farm, Section 13, Mary Ann Township, is a gas well at 722 feet.

In Knox County, Upham Gas Co.'s No. 1 on the Milan E. Mizer farm, Butler Township, was reported dry at 2,985 feet, and No. 2 on the E. H. Mickley farm, Lot 40, Union Township, was dry at 2,865 feet.

In Stark County, East Ohio Gas Co.'s No. 1 on the Thomas H. McDowell farm, Section 16, Plain Township, is a gas well at 4,516 feet. Same company has a location for No. 2 on the John Fasnacht farm, Section 10, same township. In Jackson Township, same company is drilling No. 1 Peter Schensbeckler farm, Section 7, and has a location for No. 2 on the George Letherman farm, Section 11, also in Jackson Township. Ohio Fuel Gas Co. has a rig for No. 3 on the A. J. Stoner farm, Section 3, same township. Wittmer Oil Co. is drilling No. 1 on the Anna Wagner and others' farm, Section 5, Lawrence Township.

In Perry County, Mid-East Gas Co.'s No. 3 Edward Noll farm, Section 24, Reading Township, was dry at a total depth of 861 feet.

INDIANA

The Indiana Field is showing more activity than for a long period, there being nine completions with Gibson and Knox Counties leading. In Gibson County, Mid-West Development Corp.'s No. 4 on the E. F. and L. Gudgel farm, NW NE Section 22, Center Township, was dry at 1,742 feet. Same company is drilling No. 1 on the William A. and Etta Hodges farm, SE NE Section 15, same township. Claud Noble is starting No. 1 on the William J. and Agnes Mahon farm, SW NE Section 2, same township. In Washington Township, Gilbert Schoultz's No. 2 on the Homer Davidson in Donation 118, was dry in the Mississippi lime, but showed a nice volume of gas in an upper sand. Indiana Southwestern Gas Corp. is reported drilling below 1,315 feet in No. 1 George W. Decker, SW NE Section 12, same township. Big Four Oil & Gas Co. deepened No. 2 on the Lottie Hope farm, SW SE Section 18, same township, and it made an initial of 75 bbls. at a total depth of 1,736 feet.

In Daviess County, Mid-West Development Corp.'s No. 2 on the George W. Findley farm, NW NE Section 9, Harrison Township, was dry. Same company is drilling No. 1 on the Mary and Earl Robinson farm, SW NW Section 31, same township.

In Dubois County, F. L. Damron is drilling No. 1 on the Anthony Humbert farm, SW SW Section 25, Marion Township.

In Fountain County, Hopewell Oil Co. is starting No. 1 Elmer Leas farm, NW SW Section 24, Van Buren Township.

In Harrison County, Joseph H. Kraft is drilling a shallow well on the Sid Elbert farm, NE NE Section 8, Boone Township.

In Henry County, George W. Sweigart drilled in a gas well on his fee land, NE SE Section 14, Harrison Township.

In Martin County, A. T. Spaulding is drilling No. 1 on the E. D. and E. S. Yarnell farm, NW SW Section 25, Perry Township, which is making a nice showing of both oil and gas at 535 feet, and not yet completed.

In Jay County, William Messal's No. 1 Miller, SE SE Section 16, Bear Creek Township, had an initial of 10 bbls. at 1,060 feet. In Penn Township Amber Oil Producing Co. is drilling No. 6 L. W. Edmundson farm, E half NE Section 21.

In Washington County, A. B. Bement is drilling No. 1 McCoy farm, NE NE Section 34, Brown Township.

Knox County

In Knox County, Busseron Township, Mead Oil Co.'s No. 1 Starner Bond farm, Section 11, is a gas well at 326 feet, and same company's No. 2 is drilling. H. C. Lord's No. 1 Wallace & Archie's farm, Section 11, same township, is a gas well at 626 feet.

In Sullivan County, Dome Gas Co.'s No. 2 Ross, Curry Township, is a gas well at 280 feet, and same company is drilling No. 1 Thomas Stuck farm, NE NE Section 19, same township.

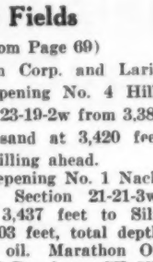
In Perry County, Rome Oil Co.'s No. 1 Henry Dutschke farm, NW NW Section 28, Tobin Township, has a fishing job and with a string of tools in the hole at 1,200 feet. Same company is reported drilling at 1,650 feet in No. 1 on the Sarah M. Sampley farm, NW SW Section 28, same township.

In Posey County, Angermeier & McMahan are shut down at 1,080 feet on the Fourth National Bank farm, No. 1, SE SE Section 11, Robinson Township, and Ray Henley is drilling No. 2 on the J. Klenck farm, NW SE Section 23, same township.

In Pike County, Claude Noble is drilling No. 3, Edward Adams farm, NW NE Section 20, Washington Township.

In Spencer County, Chris Zoercher is fishing for tools at 680 feet in No. 1 on the William Grass, Jr., farm, NW NE Section 11, Huff Township. T. F. Seitz is drilling No. 2 on the F. and G. A. Grass farm, NE SE Section 11, same township.

In Wabash County, Warren K. Schoemacher is starting a test on the Harry H. Williams farm, NW NW Section 35, Largo Township.



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TECHNICAL QUESTIONS ANSWERED

By Charles K. Francis, Ph. D., Technical Editor

This department of The Oil and Gas Journal is devoted to the manufacturing branches of the oil industry.

Those connected with the refining of crude petroleum, the manufacture of natural gasoline and closely allied industries are invited to submit their problems to Dr. C. K. Francis, technical editor. The department was created for the purpose of aiding managers, superintendents, engineers, chemists and all those engaged in the various phases of plant operation; also those connected with marketing and utilization of petroleum products.

Questions should be submitted in as much detail as possible.

Inquiries must be signed but only the given initials will be printed. The source of the question is considered to be confidential.

Questions requiring a discussion of patents, the use of intricate formulas, extended computations, or cost estimates cannot be considered.

When the matter is of general interest the reply will be published within a reasonable time.

Properties of Iraq Petroleum With S.R. and Cracking Yields

What is the nature of the Iraq crude oil? How deep are the wells? What are the yields obtained on refining?—C. A. F.

These questions are all answered in the description of Iraq crude oil by Dr. Gustav Egloff and E. F. Nelson, who have made special investigations of the oils.

Oil at Qaiyarah occurs at 700 to 1,100 feet, at Kirkuk 1,250 to 3,500 feet, and at Naft Khaneh 3,000 feet and deeper. In other structures of oil promise, which are as yet unproved, depths will range from a few hundred feet to depths beyond the present limit of the drill. Qaiyarah crude is similar in some respects to heavy Mexican crude. Kirkuk crude averages 35.7° A.P.I., has a mixed base, is sulphurous, and is, in many respects, similar to Mid-Continent crudes of like gravity. Kirkuk and Qaiyarah wells flow under moderately low pressures (less than 200 pounds per square inch at casinghead), but Naft Khaneh wells flow under as high a pressure as 1,800 pounds per square inch at casinghead.

A typical analysis of Iraq crude is:

A.P.I. gravity	35.8
Sulphur, per cent	2.0
Gasoline, 295°E.P., per cent	26.8
Topped oil, per cent	71.2
Loss	2.0

Gasoline Properties

A.P.I. gravity	64.0
Sulphur, per cent	0.08
Octane number	50

A.S.T.M. Distillation

Initial B.P.	86°F.
Distilled over, per cent—	
10	160
50	245
90	320
End point	375

Topped Crude Properties

A.P.I. gravity	25.9
Sulphur, per cent	2.40
Cold test	Below 0°F.

A reduced crude from the Baba Gurgur Field, representing 55.7 per cent of the crude oil was available for cracking tests. This reduced crude had the following properties:

Gravity, °A.P.I.	19.9
Flash (Cleveland O.C.) °F.	310
Fire (Cleveland O. C.) °F.	345
Flash (Pensky-Martens), °F.	260
Visc. Furol at 122°F., sec.	31
Sulphur, per cent	3.26
Cold test, °F.	60
B.s and w., per cent	0.2

Engler 100 ml. Distillation °F.

Initial B. P.	496
Distilled over, per cent—	
5	564
10	589
50	696
80	729
Coke by weight, per cent	8.0

Two cracking runs were made on the reduced crude at 200 pounds pressure and 935° to 945°F. transfer temperature. The cracking results are shown in the following table:

Operating Conditions		
Pressure, lbs./sq. in.	200	200
Temperature, °F.	935	945
Yields—Per Cent of Reduced Crude		
Gasoline	41.2	44.2
Residuum	50.5	43.8
Gas loss	8.3	12.0
Gas, cu. ft.°barrel charging stock	462	584
Analysis of Cracked Products—Untreated Gasoline		
Gravity, °A.P.I.	61.3	60.2
Color, °Saybolt	....	17
Gum, Mg./100 ml. (copper dish):		
Without inhibitor	....	40
With U.O.P. inhibitor (0.01 per cent)	....	12
Sulphur, per cent	....	0.31
Octane No., motor method	67	67
100 ml. A.S.T.M. Distillation		
Initial B. P.	89°F.	94°F.
Distilled over, per cent—		
10	136	144
50	246	251
90	339	346
End point	377	382
Over, per cent	96.0	95.5
Bottoms, per cent	1.0	1.0
Loss, per cent	3.0	3.5
Cracked Fuel Oil		
Gravity, °A.P.I.	5.3	3.5
Flash (Cleveland O.C.) °F.	290	310
Flash (Pensky-Martens) °F.	160	195
Vis. S.F. at 122°F., sec.	240	388
Cold test, °F.	40	45
B.s and w., per cent	0.3	0.3
Initial B.P., °F.	464	468
Pct., distilled at 572°F.	6.0	8.0

The results indicate that gasoline yields of 41.2 per cent and 44.2 per cent may be produced from 19.9° A.P.I. Baba Gurgur reduced crude with the simultaneous production of cracked fuel oil approximately meeting Bunker C specifications. It is estimated that, when producing a cracked fuel oil having a Saybolt viscosity of 300 seconds at 122°F. or Bunker C specification, the gasoline yield would be 43 per cent, by volume.

Natural Gas Uniform Composition and Heating Value

What is the composition of a normal or pure natural gas? The statement has been made that natural gas is usually quite uniform in composition and heating value. Is this true? —P. C. E.

The normal natural gas consists, in the main, of the lower hydrocarbons, methane and ethane, but the gas found in different districts may show considerable variation in the quantities of these hydrocarbons present and the dilution with other gases. This is illustrated by the examples mentioned in the paper Petroleum and Petroleum Gases as Chemical Raw Materials, presented by Bowen and Nash, before the World Petroleum Congress, London, 1933.

"The chief constituents of natural gas are the lower paraffin hydrocarbons. Gases containing considerable amounts of higher hydrocarbons up to octane, as the result of association with petroleum, are known as "wet" gases, and those consisting chiefly of methane as "dry" gases. Besides the gaseous paraffin hydrocarbons, other gases may be present, such as carbon dioxide, hydrogen sulphide, and occasionally nitrogen and helium. It is probable that naphthene and benzene vapors are present in some natural gases.

"The following analysis of a natural gas from a well in Fremont County, Wyoming, U.S.A., can be considered typical: methane, 81.30 per cent; ethane, 8.94 per cent; propane, 4.90 per cent; butane, 1.66 per cent; pentane, 0.60 per cent; hydrogen sulphide, nil; carbon dioxide, trace; nitrogen, 2.60 per cent.

"In the following table the variation in composition of some natural gases is shown:

Country—	Methane Per cent	Ethane and higher paraffins Per cent	Nitrogen Per cent	Carbon dioxide Per cent	Hydrogen sulphide Per cent	Helium Per cent
U. S. A.						
Pittsburgh, Pa. (city gas)	84.7	13.7	1.6	....	....	....
Los Angeles, Calif.	77.5	16.0	....	6.5	....	....
McKittrick, Calif.	66.2	1.0	2.4	30.4	....	....
Fort Smith, Ark.	99.2	....	0.6	0.2	....	....
Glasgow, Ky.	23.6	69.7	3.8	....	2.9	....
Dexter, Kans.	14.9	0.4	82.7	....	....	1.84
Canada—						
Medicine Hat, Alberta	90.0	3.0	5.0	0.8	....	....
Turner Valley, Alberta	71.8	25.9	6.9	2.1	....	....
Persia—						
High Pressure Gas	81.0	16.0	1.4	0.7	0.9	....
Low Pressure Gas	36.0	52.6	1.7	1.9	7.8	....

"The normal natural gas of the United States is well represented in the table by the samples from Pittsburgh and Fort Smith. The others give an idea of the variation. Much of the natural gas has a heating value of 1,000 B.t.u. per cubic foot; some give a higher figure and others less."

Iron Turnings Not Suitable To Be Used For Packing Towers

We are advised against the use of iron turnings, a cheap supply of which is available, as tower packing for the removal of small quantities of hydrogen sulphide from our gas. The reasons for this objection are not clear and we shall appreciate any information you have on the matter. —W. L. S.

Iron turnings or shavings should not be used in a tower either for the surface exposed or for chemical action as for the removal of hydrogen sulphide. With only slight oxidation they tend to form lumps and pack, the packing becoming enough sometimes to cause complete stoppage of the flow. Also the sulphur in the gas may combine with the iron to produce a sulphide which is self-igniting when exposed to the air. This deposit is capable of causing explosions and fire.

Caustic soda solution will absorb a large quantity of hydrogen sulphide. It is commonly used in the petroleum industry for removing hydrogen sulphide from natural gas and from the gas produced in the refineries from petroleum. The solution is usually made up to contain very little sodium hydroxide, the gravity ranging in most instances from about a half degree to three degrees Baume.

The equipment required is quite simple. In some plants the washing unit consists of a series of pipes through which the gas flows countercurrent to the liquid. In others a similar arrangement consists of a series of tanks or towers.

Iodine When Found in Deep Well Waters Suggests Oil

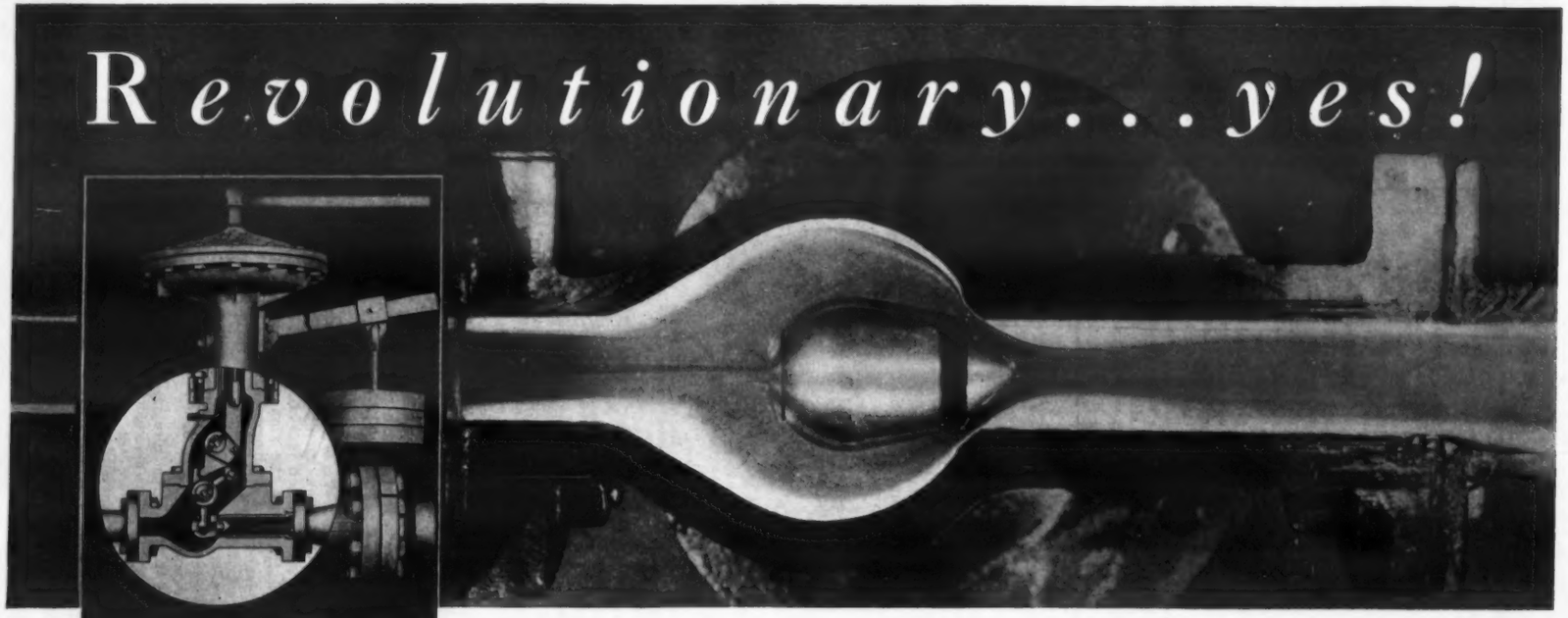
Do you know of any case where salt water reached when drilling for oil, has been found to contain iodine? Is the presence or absence of iodine from such water of any particular significance?—O. O. W.

Iodine is not found in any water in the free state, but always in combination with some other element, such as sodium, calcium, potassium, etc. However, when speaking of the composition of substances the element is often mentioned alone, without reference to the condition or form of combination.

Chemists and geologists believe that the waters associated with oil are the residues from ancient seas, many of these are similar in composition to ocean water and contain a variety of elements, iodine being recognized in a large number of them. There are many analyses of deep well waters to be found in the literature showing the presence of iodine, the two so frequently mentioned are F. W. Clark's Data of Geochemistry and Identification of Oil Field Waters, by C. E. Ristle, Jr., United States Bureau of Mines, Technical Paper 404.

Clark states that iodine has been found in sea water, reported as calcium iodate, to the extent of eight parts per million. The oil field waters of the Sunset and other fields of the San Joaquin Valley, Calif., are remarkable in that analyses indicate an iodine content of over 20 parts per million. This is large enough to warrant commercial extraction, several plants being operated for that purpose. Some of the deep-well brines of Oklahoma also contain enough iodine to permit extraction by evaporation of the water.

The presence of iodine in deep-well waters is considered a favorable sign for petroleum. This application seems to have originated as a result of the study by Mrazec, according to Ristle, of the water found in the Rumanian Oil Field. It is suggested that when relatively large quantities of iodine are found that oil may be very close, but when there is but little iodine with large quantities of bromine in the water, conditions are not encouraging for finding oil.



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NATURAL GAS DEVELOPMENTS

Compromise on Gas Rate Reached in Cincinnati

CINCINNATI, O., Mar. 18.—Union Gas & Electric Co., subsidiary of Columbia Gas & Electric Corp., and officials of the city have reached a compromise agreement on gas rates which is expected to end a four-year controversy.

A new ordinance, agreed to by the company and the city utility committee, will provide for a reduction of 3 to 24 per cent in present rates, over a five-year period, for a refund of $2,120,000 to consumers from funds segregated by the company for that purpose, and for a $300,000 extension of mains to Mt. Washington to provide gas for that community, a suburban part of Cincinnati.

The new rate is graduated in steps of 1,000 and 2,000 feet of consumption and reaches its maximum reduction at 10,000 feet, instead of 25,000 feet as at present. By this usage promotional rate the company hopes to increase consumption to offset the reduction.

Under the ordinance, the company will accept for five years rates to produce an estimated annual gross revenue of $4,695,000 which is around $500,000 less than gross revenue for 1934. Including the refund, consumers will save around $3,250,000 during the life of the ordinance.

Like the mutually agreed-to electric rate ordinance adopted late last year, the gas rate ordinance will provide that if costs rise $250,000 during any one year of the ordinance, due to additional government taxes or obligations imposed by such agencies as the NRA, a new rate schedule may be arranged.

CANADIAN WESTERN SALES

CALGARY, Alberta, Mar. 16.—The financial statement of the Canadian Western Natural Gas, Light, Heat & Power Co. for 1934 shows a gross revenue from gas sales of $1,928,744.70, a decrease of $126,872.58 from 1933, due to a milder winter. The profit on operations was $444,655. In 1934 the company purchased natural gas at a cost of $439,270. At the end of 1934 some 6,546,644,000 feet of gas has been stored in the Bow Island Field. The company's total assets were listed at $16,747,412.32 with current assets of $528,333 and current liabilities of $337,376.

Carbon Black Export Files Under Webb Law

WASHINGTON, D. C., Mar. 16.—Carbon Black Export, Inc., has filed papers under the Export Trade Act (Webb-Pomerene law) with the Federal Trade Commission, for exporting carbon black. The association will maintain offices at 500 Fifth Avenue, New York City.

Officers of the association are: C. E. Kayser, president and director; Reid L. Carr, secretary and director; F. R. Cantzlaar, treasurer; E. V. Gent, assistant treasurer; Godfrey L. Cabot, Thomas D. Cabot, F. F. Curtze, Oscar Nelson, D. P. Hynes, G. A. Williams, R. H. Eagles, Hans Huber, T. J. Butler and Robert Wishnick, directors.

Members are: United Carbon Co., Charleston, W. Va.; Columbian Carbon Co., New York City; J. M. Huber Corp., New York City; Century Carbon Co., New York City; Panhandle Carbon Co., New York City; Godfrey L. Cabot, Inc., Boston, Mass.; Texas Carbon Industries, Inc., Sayre, Okla., and the Palmer Carbon Co., Chicago.

The Export Trade Act grants exemption from the antitrust laws to an association entered into and solely engaged in export trade, with the provision that there be no restraint of trade within the United States, or restraint of the export trade of any domestic competitor, and with the further prohibition of any agreement, understanding, conspiracy or act which shall enhance or depress prices or substantially lessen competition within the United States or otherwise restrain trade therein.

Utilities Control Bill in Texas Legislature

AUSTIN, Tex., Mar. 18.—A public utilities control bill setting up a three-member commission with original jurisdiction over rates and service in every community was reported favorably by the Committee on Municipal and Private Corporations by a vote of 13 to 0, with two not voting. It is probable the bill will be placed on the suspension calendar for consideration within the next two weeks. The final draft is practically as it was written by a subcommittee headed by Fred E. Knetsch and is in keeping in the main with the administration bill written by Dr. R. H. Montgomery, utilities adviser to Governor James V. Allred and professor of economics at the University of Texas.

The principal departure from the Montgomery draft is the original jurisdiction feature. Heretofore all public utility control bills have safeguarded the rate powers of home rule cities. The only contest before the whole committee was over that issue and an amendment by J. Bryan Bradbury to restrict the jurisdiction of the commission to other than home rule cities was voted down, 7 to 6. Doctor Montgomery told the committee during public hearings that he preferred a commission with statewide authority but believed it would have a better chance of enactment with the limited jurisdiction. He said a questionnaire sent to city officials had disclosed that they were about evenly divided on the question.

An amendment was adopted to reduce the length of franchises to be terminable at will on a year's notice from 50 to 25 years.

The bill represents a departure from most public utility control bills in that it provides for fixing values of property on a prudent investment basis.

The Senate State Affairs Committee has set Thursday night to take up a general utility regulation bill and by that time expects to have a substitute measure drawn by its own subcommittee to be considered for adoption in place of the Van Zandt and Holbrook bills.

Dr. R. H. Montgomery of the University of Texas, who drew the governor's first utility measure, has been asked to be present Thursday, as have representatives of the utilities and all others interested, and especially members of the Texas League of Municipalities. Doctor Montgomery advised with the House Committee, which has reported the measure now on the calendar in that body. The Senate Committee is inclined to follow the course of the House Committee and bring in a substitute.

Both the Holbrook and Van Zandt bills provide for state utility commissions but differ materially in the plan to arrive at valuations as the basis of rate making. The substitute bill is expected to provide for the commission with powers to fix utility rates and prescribe the method by which it arrives at the valuation basis.

PROPOSES TAX ON GAS

OKLAHOMA CITY, Okla., Mar. 18.—Oklahoma and Texas have begun a tax drive to make producers of natural gas pay for the privilege of producing gas and for wasting of natural gas, H. L. McCracken, Oklahoma Tax Commission chairman, disclosed Saturday. McCracken said the Tax Commission will have ready for introduction next week an excise or severance tax of 1 cent per 1,000 feet on all natural gas produced in the State.

"The purpose of this tax is to compel producers of natural gas to pay the privilege of taking it from the ground and also for wasting it," he said.

"Gov. James V. Allred of Texas already has an identical bill ready for the Texas Legislature. While the simultaneous move by Oklahoma and Texas to levy this tax is not part of any oil states compact it works out very well toward one of the ends sought by that compact."

McCracken estimated the 1-cent severance tax on natural gas will produce approximately $3,000,000 annually.

INDUSTRIAL CONSUMPTION OF NATURAL GAS IN THE UNITED STATES IN 1932, BY STATES AND USES

State—	Field (drilling, pumping and operating gasoline recovery plants)		Manufacture of carbon black			Fuel at petroleum refineries, electric public-utility power plants, and other industrial*						Total industrial		
				Value at points of consumption		M.C.F.				Value at points of consumption			Value at points of consumption	
	M.C.F. (estimated)	Value at points of consumption (estimated)	M.C.F.	Total	Average (cents)	Petroleum refineries	Electric public-utility power plants	Other industrial	Total	Total	Average (cents)	M.C.F.	Total	Average (cents)
Alabama	.....	.....	.....	.....	....	.....	.....	4,942,000	4,942,000	$878,000	17.8	4,942,000	$878,000	17.8
Alaska	(†)	(†)	.....	.....	....	.....	.....	(†)	(†)	(†)	(†)	(†)	(†)	(†)
Arizona	.....	.....	.....	.....	....	.....	.....	(†)	(†)	(†)	(†)	(†)	(†)	(†)
Arkansas	7,351,000	$571,000	.....	.....	....	1,433,000	853,000	8,730,000	11,016,000	1,418,000	12.9	18,367,000	1,989,000	10.8
California	130,353,000	8,766,000	.....	.....	....	16,610,000	14,209,000	41,386,000	72,205,000	10,731,000	14.9	202,558,000	19,497,000	9.6
Colorado	601,000	16,000	.....	.....	....	5,000	422,000	9,998,000	10,425,000	1,899,000	18.2	11,026,000	1,915,000	17.4
District of Columbia	.....	.....	.....	.....	....	.....	.....	(‡)	(‡)	(‡)	(‡)	(‡)	(‡)	(‡)
Florida	.....	.....	.....	.....	....	.....	.....	547,000	547,000	86,000	15.7	547,000	86,000	15.7
Georgia	.....	.....	.....	.....	....	.....	115,000	1,337,000	1,452,000	332,000	22.9	1,452,000	332,000	22.9
Illinois	1,722,000	145,000	.....	.....	....	136,000	.....	11,461,000	11,597,000	3,284,000	29.2	13,319,000	3,529,000	26.5
Indiana	16,000	3,000	.....	.....	....	.....	7,931,000	2,181,000	10,112,000	2,219,000	21.9	10,128,000	2,222,000	21.9
Iowa	.....	.....	.....	.....	....	.....	1,314,000	4,891,000	6,205,000	1,112,000	17.9	6,205,000	1,112,000	17.9
Kansas	8,079,000	826,000	.....	.....	....	686,000	9,829,000	18,096,000	28,611,000	4,408,000	15.4	36,690,000	5,234,900	14.2
Kentucky	831,000	133,000	.....	.....	....	.....	.....	2,732,000	2,732,000	809,000	29.6	3,563,000	942,000	26.4
Louisiana	9,741,000	425,000	39,070,000	$1,012,000	2.6	8,041,000	17,794,000	29,163,000	54,998,000	5,721,000	10.4	103,809,000	7,158,000	6.9
Maryland	.....	.....	.....	.....	....	.....	.....	‡300,000	‡300,000	‡222,000	‡74.0	‡300,000	‡222,000	‡74.0
Michigan	148,000	21,000	.....	.....	....	.....	264,000	427,000	691,000	132,000	19.1	839,000	153,000	18.2
Minnesota	.....	.....	.....	.....	....	.....	324,000	(§)	(§)	(§)	(§)	(§)	(§)	(§)
Mississippi	31,000	4,000	.....	.....	....	.....	541,000	2,663,000	3,204,000	462,000	14.4	3,235,000	466,000	14.4
Missouri	3,000	800	.....	.....	....	18,000	1,867,000	11,738,000	13,623,000	2,491,200	18.3	13,626,000	2,492,000	18.3
Montana	1,027,000	55,000	.....	.....	....	100,000	565,000	4,056,000	4,721,000	917,000	19.4	5,748,000	972,000	16.9
Nebraska	.....	.....	.....	.....	....	.....	1,726,000	4,330,000	6,056,000	1,044,000	17.2	6,056,000	1,044,000	17.2
New Mexico	7,509,000	$28,000	.....	.....	....	.....	2,264,000	355,000	2,619,000	343,000	13.1	10,128,000	571,000	5.6
New York	244,000	91,000	.....	.....	....	1,000	80,000	1,277,000	1,358,000	694,000	51.1	1,602,000	785,000	49.0
North Dakota	.....	.....	.....	.....	....	.....	167,000	$809,000	$1,300,000	$265,000	$20.4	$1,300,000	$265,000	$20.4
Ohio	2,370,000	680,000	.....	.....	....	10,000	4,744,000	17,592,000	22,346,000	8,648,000	38.7	24,716,000	9,328,000	37.7
Oklahoma	188,600,000	7,838,000	(¶)	(¶)	(¶)	6,510,000	6,994,000	¶19,159,000	¶32,663,000	¶3,664,000	11.2	221,263,000	11,502,000	5.2
Pennsylvania	4,426,000	1,376,000	.....	.....	....	1,377,000	28,000	27,613,000	29,018,000	9,202,000	31.7	33,444,000	10,578,000	31.6
South Dakota	.....	.....	.....	.....	....	.....	62,000	1,364,000	1,426,000	244,000	17.1	1,426,000	244,000	17.1
Tennessee	.....	.....	.....	.....	....	.....	3,323,000	1,244,000	4,567,000	821,000	18.0	4,567,000	821,000	18.0
Texas	144,943,000	8,213,000	122,215,000	1,615,000	1.3	25,564,000	21,460,000	50,734,000	107,758,000	14,068,000	13.1	374,916,000	23,896,000	6.4
Utah	†2,000	†200	.....	.....	....	†369,000	.....	†5,794,000	†6,163,000	†977,800	†15.9	†6,165,000	†978,000	†15.9
Virginia	.....	.....	.....	.....	....	.....	.....	(‡)	(‡)	(‡)	(‡)	(‡)	(‡)	(‡)
West Virginia	12,915,000	2,921,000	.....	.....	....	602,000	77,000	12,632,000	13,311,000	3,691,000	27.7	26,226,000	6,612,000	25.2
Wyoming	8,466,000	272,000	(¶)	(¶)	(¶)	6,005,000	266,000	¶5,528,000	¶11,819,000	¶651,000	5.5	20,285,000	923,000	4.6
Miscellaneous	.....	.....	6,952,000	266,000	3.8	.....	.....	.....	.....	.....	....	.....	.....	....
Total 1932	529,378,000	32,585,000	168,237,900	2,893,000	1.7	67,467,000	107,239,000	296,127,000	470,833,000	81,268,000	17.3	1,168,448,000	116,746,000	10.0
Total 1931	570,365,000	40,469,000	195,396,000	4,048,000	2.1	75,548,000	138,343,000	322,700,000	536,591,000	98,030,000	18.3	1,303,352,000	142,547,000	10.9

*Gas used at portland cement plants included under "Other industrial." †Utah includes Alaska and Arizona. ‡Maryland includes District of Columbia and Virginia. §North Dakota includes Minnesota. ¶Gas used in manufacture of carbon black included under "Miscellaneous" for United States total and under "Other industrial" for state total to avoid disclosing figures of individual operators.

PERSONAL PARAGRAPHS

R. J. ST. GERMAIN, consulting geologist of Houston, Tex., and formerly of Tulsa, spent several days in Tulsa last week.

* * *

LUDWIG SCHMIDT, petroleum engineer, U. S. Bureau of Mines, Bartlesville, Okla., was a visitor in Oklahoma City, Okla., last week.

* * *

CARL J. VON BIBRA was re-elected president of the Exeter Oil Company at the annual meeting held in Los Angeles, Calif., during which the directors were also re-elected.

* * *

W. H. STEELE, of the Union Oil Company, has been appointed auditor of general accounts, and C. L. CRAIG has been appointed auditor of disbursements, reporting direct to A. B. MASON, assistant comptroller.

* * *

C. W. MONTGOMERY, of the Standard Oil Company, was elected a member of the Transportation Club at the meeting held in Los Angeles, Calif. J. D. REARDEN, of the Union Oil Company, is chairman of the membership committee.

* * *

THE engagement is announced of MISS JEAN SCOTT McDOUGALL, of Toronto, Ontario, to FREDERICK ANDERSON, of Talara, Peru, the marriage to take place in Panama City early in April. Mr. Anderson is a member of the International Petroleum Company staff.

* * *

J. W. DAVIS and E. B. LILES have been reappointed assistant secretaries of the Texas Company of California.

* * *

FRANK HOWARD, president of the Standard Oil Development Company, is now in Florida on a vacation trip.

* * *

MR. and MRS. FRANK STEVENS have returned to Wainwright, Alberta, after spending the winter in California.

* * *

CHARLES F. ROESER and MRS. ROESER, of Fort Worth, Tex., have returned from a cruise to the Bermudas.

* * *

AXTELL J. BYLES, president of the American Petroleum Institute, was in Washington, D. C., for several days last week on business.

* * *

R. P. PRINGLE, vice president of Tide Water Oil Company, with headquarters at Tulsa, is spending a few weeks' vacation in Florida.

* * *

ROBERT JACQUEMINET, engineer of the Gironde Oil Refineries, France, arrived in the United States last week on the Champlain of the French line.

* * *

R. C. STEINMAN, chief scout for Sinclair Prairie Oil Company, with headquarters at Tulsa, visited the company's office at Houston, Tex., last week.

* * *

E. McCUNE, land man for the Sun Oil Company, with headquarters at Dallas, Tex., spent a few days at the company's offices at Houston, Tex., last week.

* * *

WALTER C. TEAGLE, president of Standard Oil Company (New Jersey), was in Washington, D. C., for the meetings of the Planning and Coordination Committee.

P. N. WIGGINS, JR., independent oil operator, and J. A. PATTON, royaltor, both of Dallas, Tex., were visitors in Tulsa last week.

* * *

H. D. CURTIS, of Thermopolis, Wyo., treasurer of the Empire Oil Company, and MRS. CURTIS, were in Casper, Wyo., several days recently.

* * *

E. C. DILGARD, Rocky Mountain representative for the Cleveland Pneumatic Tool Company, recently made a trip to Calgary, Alberta, Canada.

* * *

S. M. ZANDMER, of Los Angeles, Calif., is in southern Alberta, in connection with a test by the Terminal Oil Company on the Del Bonita structure.

* * *

RODNEY BOTHWELL, district land man of Darby Petroleum Corporation in Kansas, spent a few days last week at general headquarters in Tulsa.

* * *

RICHARD HAMMOND, University of Wichita graduate, has become affiliated with Lee C. Moore, Inc., manufacturer of oil rigs and derricks, and is stationed at Russell, in western Kansas.

* * *

W. K. ATCHESON, superintendent of the automotive department of the Pure Oil Company, and president of the Petroleum Motor Transport Association of Oklahoma, is recovering from a major operation at St. Johns Hospital, Tulsa.

R. P. RUSSELL, vice president and general manager of the Standard Oil Development Company, has returned to the New York offices from a trip to California and other West Coast points.

* * *

STATE SENATOR H. H. SCHWARTZ, president of the Arro Oil & Refining Company of Lewistown, Mont., has returned to Casper, Wyo., after spending a week at the company's refinery at Lewistown.

* * *

R. OGARRIO, vice president and general manager of the producing department, the Texas Company, New York City, and GEORGE RAY, JR., of the legal staff, have been on a tour of inspection of the company's properties in southern Louisiana.

* * *

HOYT H. HOLLISTER, chief engineer of the White Star division, Socony-Vacuum Oil Company, Inc., returned to Detroit, Mich., last week after making a preliminary survey for the new $175,000 storage plant and western Michigan rail-water terminal in Muskegon, Mich.

* * *

THOMAS S. KNAPP, of Mount Pleasant, Mich., presented two papers, one on the thickness of the glacial drift in Michigan, and the other on "The Production and Marketing of Natural Gas and Petroleum of Michigan," before the geological and geographical divisions of the Michigan Academy of Science at Ann Arbor, Mich., recently.

* * *

HARRY T. KLEIN, of the Texas Company, from New York, was in Washington, D. C., for a couple of days last week.

* * *

R. L. PATTINSON, of the Central Pipe Line Company, Chatham, Ontario, recently paid a business visit to Toledo, Ohio, and adjacent points.

* * *

RALPH ZOOK, of Sloan & Zook, Bradford, Pa., attended the recent meetings of the Planning and Coordination Committee in Washington, D. C.

* * *

CHARLES BUNJI, JR., and CARL GUMPH, of the Illinois Pipe Line Company, Findlay, Ohio, were in Washington, D. C., on business for the company.

* * *

DORAN MILES has resigned as chemist for the British-American Oil refinery at Coutts, Alberta, to accept a position in Vancouver, British Columbia.

* * *

L. S. SWEENEY, manager of the Maple Leaf Petroleum refinery at Coutts, Alberta, made a business trip recently to Lethbridge and Calgary, Alberta.

* * *

PAUL OLES, formerly geologist for the Sinclair Prairie Oil Company, has been named president of the newly organized Pine Rock Oil Company, at Midland, Tex.

* * *

LAWRENCE HAGY, independent operator of Amarillo, Tex., is feeling his way around on a pair of crutches after an accident in an automobile wreck recently.

* * *

H. L. STEGALL, formerly with the crude oil purchasing department for Tide Water Oil Company at Tyler, Tex., has been transferred to the company's offices at Houston, Tex.

DO YOU REMEMBER?

From The Oil and Gas Journal Files

25 Years Ago

March 18, 1910

George C. Priestley, of Bartlesville, is taking options on northern Oklahoma oil properties, the aggregate value of which is estimated from $5,000,000 to $10,000,000, and no one else seems to know whom he represents in the deal. The most persistent opinion is that California capitalists are the men behind the deals.

R. W. McIlvaine is in charge of the Arkansas Natural Gas Co.'s business in Shreveport, La.

Richard S. Gray, formerly of Oil City, is now connected with the land department of the Prairie Oil & Gas Co., in Tulsa.

20 Years Ago

March 18, 1915

J. S. Cullinan, of the Texas Co., says he expects to see Oklahoma oil selling for $5 per barrel some day. W. S. Fitzpatrick, of the Prairie Oil & Gas Co., says just now he can buy 2,000,000 bbls. of Cushing, Okla., oil for 27 cents per barrel. The posted price is 40 cents per barrel for all Oklahoma oil excepting Healdton which is 30 cents per barrel.

Thomas A. Edison makes benzol from gas extracted from bituminous coal in plant near Johnstown, Pa.

Mrs. John D. Rockefeller died at her home in Tarrytown, N. Y., on March 12. She had been an invalid a long time, but her death was unexpected. Mr. Rockefeller and son, John D. Rockefeller, Jr., were summoned home from Florida but Mrs. Rockefeller passed away while they were en route.

P. L. Mulkin, of the United Natural Gas Co., has been made city agent for the company in Meadville, Pa.

E. W. Marland believes the western half of Osage County will produce more oil than the eastern half. The western half has not been explored. Mr. Marland also says that all the money he made in the Ponca City Field he spent drilling dry holes on Oklahoma school lands on which he holds 115,000 acres in leases.

10 Years Ago

March 19, 1925

Eighty-five locations were staked in the Smackover Field last week because of the discovery of a deeper pay sand.

The Standard Oil Co. (Indiana) is negotiating for the purchase of all the Doheny oil properties in Mexico. If the deal is consummated it will be popularly regarded as a $125,000,000 transaction, only part cash.

The average price of 20 representative oil stocks on the New York Stock Exchange is $54.14 per share.

DORSEY STRAITIFF, of the Rocky Mountain Drilling Company, of Casper, Wyo., was in Denver, Colo., the past week on business.

* * *

E. J. BOOS, who has been appointed resident geologist for the Phillips Petroleum Company in Colorado, has established headquarters at Denver.

* * *

J. R. GANN, vice president of Tide Water Oil Company, with headquarters at Houston, Tex., left last week for an extended business trip to New York.

* * *

F. T. MANLEY, vice president in charge of refining of the Texas Company, New York, visited several days in Houston, Tex., on business and pleasure.

* * *

JAMES J. COSGROVE, Continental Oil Company, New York, spent two days in Washington, D. C., on pipe line valuation work with the Interstate Commerce Commission.

* * *

JOHN A. McKINLAY, assistant manager of the Anglo-Ecuadorian Oilfields Company, accompanied by MRS. McKINLAY, arrived in New York last week on the Grace liner, Santa Clara.

* * *

D. F. VICKERS, manager of the pressure distillate department of Sinclair Refining Company, at Fort Worth, Tex., visited the company's office at Houston, Tex., the past week.

* * *

O. G. MARTIN, treasurer of the Argo Oil Company and affiliated companies, and JAMES R. JONES, attorney for the same interests, went from Denver, Colo., to Cheyenne, Wyo., the past week to attend the annual meetings of the Mountain & Gulf Oil Company.

* * *

Made Regent of His Alma Mater

Major J. R. Parten, president of the Woodley Petroleum Company and recently appointed to the board of regents of Texas University, was studying law and science in that institution when he left it at the age of 19 to enter the second officers training camp in Leon Springs in the summer of 1917. He was mustered out of service as a major. He was offered command of army training at Harvard University, but decided instead to try himself out in the oil business in Shreveport, La., where a boom was under way.

MAJOR J. R. PARTEN

Major Parten developed valuable production in Louisiana and Arkansas and in 1922 his holdings and others were consolidated under his supervision into what later became the Woodley Petroleum Company. In 1925 he was placed in active charge of the company's operations as vice president and general manager. Two years ago he was made president of the company.

Recognized as a leader of a strong group of independent operators, Major Parten has been active in the fight for stabilization of oil markets and proration of production.

Major Parten was born in Madison County, Texas. He married Miss Opal Smith Woodley, of Shamrock, who was a student at Texas University at the time he was there. He owns and pilots his airplane and frequently flies from Houston, his home city, to Washington, D. C., or Austin when legislation in which he is interested is pending, or to his company's properties scattered over Texas and Louisiana. His interest in Texas University has been manifested in many ways since he left it for army service.

W. M. BUSHNELL, construction superintendent for Sinclair Refining Company at Fort Worth, Tex., spent a few days in Houston, Tex., on business the past week.

* * *

JOHN E. SHATFORD, member of the Planning and Coordination Committee, has returned to Washington, D. C., after attending the funeral of HOWARD BENNETTE, at Conroe, Tex.

* * *

SIDNEY H. KEOUGHAN, formerly president of the Continental Oil Company, who is now engaged in contracting oil well drilling, was in Denver, Colo., from Casper, Wyo., the past week.

* * *

C. A. JOHNSON has been re-elected president of the Holly Development Company which has important holdings in the Huntington Beach and Dominguez Fields of the Los Angeles Basin.

* * *

JAMES S. ALCORN, president of the Alcorn Combustion Company, spent Wednesday in Tulsa, Thursday in St. Louis, Mo., and was in Chicago Friday on his way back to his offices in New York City.

* * *

DR. M. F. COOLBAUGH, president of the Colorado School of Mines, has returned to Golden, Colo., from a trip to Washington, D. C., where he went in connection with a proposed survey of Colorado mineral resources.

* * *

FRANK L. COCHRAN, head of the sales department of the Standard Oil Company (Indiana) for the Rocky Mountain area, has returned to Denver, Colo., headquarters from Chicago, where he went to confer with the executives of the company.

* * *

RALPH TAILEY, head land man for the Magnolia Petroleum Company at Dallas, Tex., visited the company's office at Lake Charles, La., the past week.

* * *

SAM TENNANT, representative of the Williamsport Wire Rope Company, with headquarters at Houston, Tex., is on a two or three months' business trip to Maracaibo, Venezuela.

* * *

WILLIS H. CARRIER, former president American Society of Heating and Ventilating Engineers, also past president of American Society of Refrigerating Engineers, Newark, N. J., addressed a group of Oklahoma Gas & Electric Company employes in Oklahoma City, Okla., recently on "Air Conditioning."

* * *

GEORGE W. FOX, assistant to the president of the Texas Pipe Line Company, Houston, Tex., has been elected assistant secretary of the company, and J. W. EMISON, who has been assistant secretary, has been elected assistant treasurer. Mr. Fox also retains his capacity as assistant to the president.

* * *

DR. F. W. SULLIVAN, of Chicago, recently appointed to succeed DR. ROBERT E. WILSON as director of research for the Standard Oil Company (Indiana), was a recent visitor in Casper, Wyo. Doctor Sullivan and DR. C. C. BUCHLER, of the Casper laboratories of the Standard, were former classmates at the University of Michigan.

* * *

DR. BELA HUBBARD, chief of the geophysical department of the Carter Oil Company, Tulsa, will go to New York April 1 to become assistant to DR. EUGENE STEBBINGER, chief geologist of the Standard Oil Company of New Jersey. He will be succeeded in Tulsa by STUART SHERAR, until the close of 1934 a member of the geophysical department of the Humble Oil & Refining Company at Houston, Tex.

D. K. HUTCHCRAFT, engineer, and GEORGE W. PROBST, manager, Clark Brothers Engine Company, Tulsa, were Oklahoma City, Okla., visitors last week.

* * *

G. H. STOKES, of the exploration department of the Shell Petroleum Corporation at St. Louis, Mo., is making an inspection tour of the company's holdings in coastal Louisiana.

* * *

H. GLENN CALDWELL, of Mount Pleasant, Mich., has purchased the interest of CLIFFORD RUSSELL in the company of Russell & Caldwell, Mount Pleasant, which handles marketing transportation of products of the Roosevelt Refinery by truck throughout Michigan.

* * *

L. W. GROTHAUS, assistant to the president, Allis-Chalmers Manufacturing Company, Milwaukee, Wis., visited Oklahoma City and Tulsa last week on company business as the guest of D. M. McCARGAR, district manager, Mid-Continent division, Allis-Chalmer Company, Tulsa.

* * *

WILLIAM L. ROY has been appointed assistant to R. R. CUNNINGHAM, manager of the sales promotion and training department of the Standard Oil Company of New Jersey. Mr. Roy formerly was connected with the sales activities of several concerns prominent in the commodity field.

* * *

R. E. POWELL, superintendent of Humble Oil & Refining Company refineries, announces that M. L. SNYDER, assistant superintendent of the Baytown, Tex., plant, in charge of the co-ordinating department, will become official representative of the refining department to study refining practices and building contacts with other refineries. JAMES HARROP, of the technical service department, will succeed Mr. Snyder, and SMITH D. TURNER will take Mr. Harrop's job. R. N. DYER, now in the Baytown industrial relations department, will be transferred to Houston, Tex.

J. M. WEST, president of the West Production Company at Houston, Tex., has been appointed by GOVERNOR J. V. ALLRED, a member of the board of directors of Texas Technological College at Lubbock.

* * *

E. V. FORAN, consulting engineer, Parker, Foran and Knode, Austin and Big Lake, Tex., is in the Fitts Pool of Oklahoma, supervising the work of completing wells with well head pressure control drilling methods.

* * *

CLYDE M. BECKER, consulting geologist, Chickasha, Okla., and with the conservation department of the Oklahoma Corporation Commission, Oklahoma City, has just returned from a visit to his mining property at Hanover, N. Mex.

* * *

F. E. BROAD, of F. B. Broad & Son, Tokio and Kobe, Japan, who has been making a tour of oil fields and refineries in this country, is now visiting plants on the East Coast, following a visit to Tulsa and other Mid-Continent points. He will return to Japan, April 1.

* * *

FRANK L. COATES, of Henry L. Doherty & Company, who heads the oil operating division of the Cities Service interests, was re-elected president of the Ohio Society of New York at the forty-ninth annual dinner of the society held last week at the Hotel Pennsylvania in New York City. Mr. Coates lived in Toledo for many years, heading Cities Service public utility operations in that section of the state.

* * *

H. JOHN EASTMAN, president, Eastman Oil Well Survey Company; W. C. WHALEY, vice president, Barnsdall Oil Company; RUSH M. BLODGET, general manager, Oil Producers Sales Agency, and R. H. GARRISON, consulting petroleum engineer, were the principal speakers at the meeting of the Los Angeles Basin Chapter of the American Petroleum Institute held in the Shell Recreation Hall at Long Beach, Calif.

MARKET RECORD OF OIL SECURITIES

Active Oil Stocks Listed on New York Stock Exchange

Compiled by Carl H. Pforzheimer Co., 25 Broad Street, New York City, Members New York Stock Exchange and New York Curb Exchange

1935 High	1935 Low	Week ended March 16 Sales	Week ended March 16 High	Week ended March 16 Low	Week ended March 16 Close	Stocks—	Total shares outstanding	Par value	Dividend rate	Payable or last paid	Dividends paid in 1934	1934 High	1934 Low	1933 High	1933 Low
57	48½	1,800	55	52	52	Amerada Corp.	774,875	N.P.	50cQ	1-31-35	$2.00	55⅝	39	47⅝	18½
25⅜	21⅜	9,100	22½	21⅜	21¾	Atlantic Refining	2,673,834	$25	25cQ	3-15-35	1.00	35¼	21½	32½	12⅜
7	5⅞	24,300	6⅛	5⅞	6	Barnsdall Corp. A	2,248,795	$5	....	5-11-31	....	10	5⅞	11	3
7	3⅜	43,900	4⅜	3⅜	4⅛	Columbia Gas & Elec.	11,610,036	N.P.	....	5-15-34	‡ .25	19¼	6⅝	28⅛	9
8¾	6½	25,300	7⅛	6½	6⅞	Consolidated Oil Corp.	14,218,835	N.P.	14c	10-31-34	.42	14¼	7¼	15¾	5
19⅛	15¼	23,600	16¾	15¼	15¼	Continental Oil of Delaware	4,738,593	$5	12½c	4-30-35	.50	22¾	15¾	19⅝	4⅞
18⅞	11¾	4,700	13⅝	11¾	12⅞	General Asphalt	387,149	$10	....	6-15-32	....	23½	12	27	4⅝
3⅜	1½	6,400	2⅜	1½	2⅛	Houston Oil (new)	1,098,618	$25	....	10-17-30	....	5⅝	2½	7⅜	1⅜
1⅞	¾	1,300	1	¾	¾	Louisiana Oil Refining	1,302,158	N.P.	....	.....	....	3⅜	¾	4	⅝
12⅞	9½	6,700	10½	9½	9⅞	Mid-Continent Petroleum	1,857,912	$10	25c	11-15-34	.50	14⅜	9⅛	16	3¾
14⅝	9	2,800	10⅛	9	9¼	National Supply of Delaware	382,591	$25	....	5-15-31	....	21⅛	10	28⅝	4
10⅞	9⅜	23,600	9¾	9⅜	9⅝	Ohio Oil Co.	6,563,107	N.P.	15c	12-15-34	.45	15⅞	8½	17⅝	4¾
8¾	7	1,000	8	7½	7½	Pacific Western Oil	1,000,000	N.P.	40c	11-30-34	.40	9⅜	5½	9½	3
1⅜	⅝	200	⅝	⅝	⅝	Panhandle P. & R.	198,770	N.P.	....	.....	....	2½	⅝	4¼	⅜
16	13¾	19,900	15¼	13¾	15¼	Phillips Petroleum	4,154,687	N.P.	25c	3-1-35	1.00	20¾	13⅜	18¾	4¾
8¾	6½	3,400	7½	6½	6¾	Plymouth Oil Co.	1,014,082	$5	4% Stk.	12-22-34	75c & 4% Stk.	16¾	7¼	17⅝	6¾
7¾	6	10,900	6½	6	6¼	Pure Oil	3,038,370	N.P.	....	9-1-30	....	14⅞	6⅛	15⅜	2½
32⅜	29½	1,700	30⅛	29½	30	Royal Dutch N. Y. shares	432,224	$14	$1.35	7-31-34	1.35	39⅛	28⅝	39¾	17⅝
26⅞	20¾	2,500	21½	20¾	21½	Seaboard Oil of Delaware	1,204,460	N.P.	15cQ†	3-15-35	1.00	38⅜	20¾	43⅜	15
7⅞	5⅝	8,700	6¼	5⅝	5⅞	Shell Union Oil	13,070,625	N.P.	....	6-30-30	....	11½	6	11⅝	4
78¾	64½	1,300	66	64½	65½	Shell Union Oil pfd.	400,000	$100	....	7-1-31	....	89	57	61	28½
18¾	13½	6,600	15⅞	13½	14¼	Simms Petroleum	461,698	$10	50c	2-1-35	.55	17⅛	7¼	12⅜	4⅞
8	6½	1,600	7¾	7⅛	7½	Skelly Oil	1,008,514	$25	....	12-15-30	....	11½	6	9⅞	3
14⅞	11	56,100	12½	11	12⅜	Socony-Vacuum	31,019,694	$25	15cQ	3-15-35	.60	19⅞	12½	17	6
32⅜	27¾	14,600	29	27¾	28½	Standard Oil of California	13,102,900	N.P.	25c	3-15-35	1.00	42⅞	26½	45	19½
25¼	23	15,500	24	23	23½	Standard Oil (Indiana)	15,941,894	$25	25cQ	3-15-35	1.00	32¾	23¼	34	17
32	29⅞	No sales ..	..	..	..	Standard Oil of Kansas	200,000	$10	50cQ	10-31-34	2.00	41	26	39⅞	12¾
43½	36	25,600	37⅛	36	36¼	Standard Oil of New Jersey	25,740,065	$25	50cSA†	‖3-15-35	1.25	50⅛	39¼	47½	22¾
68½	61¾	300	63	61¾	61¾	Sun Oil	1,733,013	N.P.	25cQ	3-15-35	$1 & 9% Stk.	74¼	51½	59	35
21⅝	16½	20,600	18¾	16½	17⅝	Texas Corp.	9,486,417	$25	25cQ	4-1-35	1.00	29⅜	19⅝	30⅛	10¾
4¼	3¼	3,100	3½	3¼	3¼	Texas Pacific Coal & Oil	880,703	$10	....	12-31-29	....	6½	2½	6½	1⅜
10	7¾	12,700	8¼	7¾	7⅞	Tide Water Associated	5,618,672	N.P.	....	2-16-31	....	14⅜	8	11⅜	3⅛
88½	84	1,000	88½	84½	84½	Tide Water Associated pfd.	666,524	$100	$2§	4-1-35	§8.50	87	64½	65¼	23½
16⅜	14¾	4,600	16	15½	15⅝	Union Oil of California	4,386,070	$25	25cQ	2-9-35	1.00	20½	11½	23⅜	8½
26⅛	20⅞	1,800	23¼	20⅞	23¼	Union Tank Car Co.	1,200,000	N.P.	30cQ	3-1-35	1.20	25¾	15⅝	22¾	10½
2⅝	1	3,100	2	1	1½	Wilcox Oil & Gas	424,839	$5	....	5-10-28	....	5¾	2	5½	2

*Ex-dividend. †Plus extras. ‡Payable in preferred stock. §On account of accumulated and current dividends. ‖Distribution 4/75 Mission Corp.

Active Oil Stocks Listed on New York Curb

Compiled by Carl H. Pforzheimer Co., 25 Broad Street, New York City, Members New York Stock Exchange and New York Curb Exchange

1935 High	1935 Low	Week ended March 16 Sales	Week ended March 16 High	Week ended March 16 Low	Week ended March 16 Close	Stocks—	Total shares outstanding	Par value	Dividend rate	Payable or last paid	Dividends paid in 1934	1934 High	1934 Low	1933 High	1933 Low
33	30½	200	33	31½	31½	Buckeye Pipe Line Co.	200,000	$50	75cQ	3-15-35	$3.00	38	26	39¾	25
2⅜	1⅝	2,400	2⅛	1⅝	1⅝	Carib Syndicate	799,020	25c	....	.....	....	5½	1½	7¾	¼
157	140	No sales ..	..	..	..	Chesebrough Mfg. Co.	120,000	$25	$1Q†	3-29-35	11.50	150	116	129	71
1½	¾	39,300	1⅛	¾	1⅛	Cities Service	37,804,394	N.P.	....	6-1-32	....	4¼	1¼	6¼	1½
1⅛	¾	600	1	¾	¾	Colon Oil	2,200,000	N.P.	....	.....	....	3¼	½	4	¼
⅞	⅜	1,400	½	⅜	⅞	Cosden Oil	399,687	$1	....	.....	....	3⅞	½	3⅞	1⅜
13⅜	10	8,000	11	10	10⅛	Creole Petroleum	6,974,356	$5	....	.....	....	14⅜	9⅝	12	4¾
4⅞	4½	No sales ..	..	..	..	Darby Petroleum	509,696	$5	25c	1-25-35	.50	7½	4⅛	8	2⅛
1⅛	1⅛	No sales ..	..	..	..	Derby Oil & Refining	263,162	N.P.	....	.....	....	2¼	1	2¾	⅞
38	34	No sales ..	..	..	..	Eureka Pipe Line	50,000	$50	$1Q	2-1-35	4.00	37	30	41¾	20
60⅞	50¼	4,600	52⅞	50¼	52	Gulf Oil Corp.	4,538,101	$25	....	10-1-31	....	76¾	49¾	62	24
50¾	44	4,300	47	45¾	46¾	Humble Oil & Refining (new)	8,923,935	N.P.	25cQ	4-1-35	$1.25	496	33¼	105½	40
17⅛	15⅜	11,400	16¼	15⅜	15⅞	Imperial Oil of Canada	26,857,152	N.P.	25cSA†‡	12-1-34	.92½	17⅞	12⅝	15⅞	6½
4½	3⅝	800	4⅛	3⅝	3⅝	Indiana Pipe Line	300,000	$10	15cSA†	11-15-34	.35	6⅞	3⅝	8	3⅛
31⅜	28	9,200	29½	28	28⅝	International Petroleum	14,247,088	N.P.	56cSA†‡	12-1-34	2.28	33⅜	19⅜	23½	8⅞
6	4⅜	11,400	5¾	5⅛	5½	Louisiana Land & Exp.	3,000,000	N.P.	....	.....	....	5	2⅛	2¼	⅛
4⅜	3⅝	No sales ..	..	..	..	Lion Oil Refining	270,000	N.P.	....	10-27-30	....	6	3⅜	9½	1¼
6¼	4½	2,100	4⅞	4½	4⅝	Lone Star Gas	5,382,723	N.P.	15c	2-15-35	‖ .16	8⅜	4¼	11⅞	4⅜
4⅝	4⅛	1,300	4½	4⅛	4⅛	Mountain Producers	1,682,182	$10	15cQ	4-1-35	.60	5½	4	6½	2½
14	11¾	1,400	12¼	11¾	12½	National Fuel Gas	3,810,183	N.P.	25cQ	4-15-35	1.00	18⅛	13⅛	20	10
8	6⅝	100	7⅜	7⅜	7⅜	National Transit	509,000	$12.50	35cSA	12-15-34	.75	9½	7	10	5½
2⅝	2	200	2	2	2	New Bradford Oil	1,445,202	$5	10cSA	3-15-35	.20	2½	1¾	2⅛	½
2⅛	1⅜	900	1½	1½	1½	New Mexico and Arizona	1,000,000	$1	....	.....	....	2¾	1	1⅞	½
3⅝	3¼	No sales ..	..	..	..	New York Transit	100,000	$5	15cSO	10-15-34	.30	4¾	3	4⅞	3
5⅝	5¼	No sales ..	..	..	..	Northern Pipe Line	120,000	$10	25cSA	1-2-35	.50	7	4⅝	6⅛	4¼
2⅛	1½	10,000	1¾	1⅝	1⅝	Pantepec Oil	1,608,700	N.P.	....	.....	....	2⅝	⅞	3¾	⅛
1¼	1	500	1⅛	1	1⅛	Ryan Consolidated	296,931	N.P.	....	.....	....	3⅜	⅞	4¼	⅝
6¼	5⅝	900	6	5⅝	5¾	Salt Creek Producers	1,496,859	$10	20cQ	2-1-35	.80	7⅞	5½	9¼	3½
23¾	22⅛	1,400	22⅝	22⅛	22⅝	South Penn Oil	1,200,000	$25	30cQ	3-30-35	1.20	26½	17½	22⅛	11
4	3⅞	100	4	4	4	Southern Pipe Line	100,000	$10	15cSA	3-1-35	.25	5½	3½	6	2⅛
52½	45¼	No sales ..	..	..	..	Southwest Penna. Pipe Lines	35,000	$50	$1Q	4-1-35	5.00	47	41	43	24½
21⅝	18	1,900	19½	18½	19	Standard Oil of Kentucky	2,606,983	$10	25cQ†	3-15-35	1.50	18⅜	14⅝	19¼	8⅝
9	8¼	No sales ..	..	..	..	Standard Oil of Nebraska	190,822	$25	....	6-20-34	.50	16⅞	8¼	20½	11
16¼	12	1,000	12⅞	12	12½	Standard Oil of Ohio	753,740	$25	....	1-3-33	....	28½	12¼	41	15½
1¼	1	2,900	1	1	1	Sunray Oil	1,610,810	$1	....	4-15-31	....	2	⅛	1½	⅛
6⅞	5	1,000	5½	5	5	Texon Oil & Land	936,028	N.P.	15cQ†	12-29-34	.90	11	4⅜	13¾	6⅛

*Ex-dividend. †Plus extras. ‡Payable in Canadian funds. §Includes 50 cents on old $25 par value stock. ‖Payable in preferred stock.

Note—In comparing highs and lows for the several years in the two tables, it will be necessary to take into consideration cases where there have been stock split-ups.

FIELD PROBLEMS FROM READERS

Edited by Thomas F. Smiley

This department is conducted in order that men connected with the drilling, producing and transporting branches of the petroleum industry may obtain aid in solving problems that confront them in their work. Readers are invited to send questions freely. These questions will be placed in the hands of persons capable of answering them authoritatively, and the answers, based on the best available information, will be published.

Each question should give as much detail as possible, especially if it involves depths of sands, types of sands and operations on adjoining or nearby properties. The source of questions will be considered confidential, and only the initials of the sender will be published. Questions involving patented processes, intricate formulas or estimates of cost cannnot be answered. If an immediate answer is important, one will be given by mail when the writer requests it.

In this connection, The Oil and Gas Journal will be glad to publish articles from field men who have devised new methods or improved old ones.

Beneficial Results of Unitization Shown by Actual Operation

I have read many of the arguments put forward for the unit plan of developing an oil pool, and they appear to be sound, but I have not seen the sort of comparisons that I would like to. Can you tell me of some pool that has been developed on the unit plan and that can be compared with some similar pool in the matter of concrete results and showing clearly the benefits of the unit plan? If you cannot do this I would appreciate any specific facts and figures taken direct from the field that prove or help to prove the case for the unit plan. In other words, I would like to have some straight facts from the field instead of just scholary discussion.—E. F. Y.

"Argument" and "scholarly discussion" often must precede actual adoption of even some of the most valuable ideas. This seems to be true in the case of unit operation, for the advocates of this orderly plan of oil field development have had much difficulty in overcoming specious but persistent defense of the old every-man-for-himself system. However, it is fairly easy to give just about the kind of "straight facts from the field" that you seek. The following, which seems to be quite in point, is taken from an article by Vance Rowe, of the Carter Oil Co., in The Lamp:

"The Little River Pool of the Seminole area was discovered in 1927. In 30 days more than 100 wells were frantically drilling, with contractors waging a contest with one another to reach the sand. Reckless haste with mad confusion obliterated the reasoning that there is a producing edge to every pool. Maps show and records corroborate the fact that 40 dry holes were strung along the west side of Little River to determine the limits of a pool which turned out to be 6 miles long and 2 miles wide. These 40 dry holes were around 4,500 feet deep with an average cost of $50,000 per well. That is only one item of $2,000,000 charged to reckless drilling in a single pool. The identical situation could be multiplied many times.

"Compare the Little River situation with the Lucien Pool—one of the newer fields in Oklahoma largely developed under a unitized agreement plan.

"Lucien, like Little River, is a long and comparatively thin pool and both produce most of their oil from the Wilcox sand. The discovery at Lucien was completed in October, 1932, and we find 18 months later 25 wells completed with a combined capacity of 65,000 bbls. Proration and unitization provided a leisurely development which enabled the operators to study the situation and map out a program. This calm method of doing business resulted in only three dry holes being drilled on the west edge to practically prove the producing limits on that side. Three failures against 40 at Little River—in a situation affording a real comparison. It is a significant contrast in drilling practices.

"The Wilcox zone at Oklahoma City has 500 wells, or one well to every five acres. In round numbers, the cost of these 500 wells is $60,000,000. The Wilcox sand is very porous and one well to 10 acres would have been ample for maximum recovery. In other words, half as many wells would have saved the operators a cool $30,000,000.

"On top of this, a great many engineers would recommend one well to 20 acres at Oklahoma City—a $40,000,000 saving. There are a few—and their judgment is rated well—who would have drilled one well to 40 acres.

"These important savings were possible under unitization. Instead, a high-powered drilling campaign swung into action. The casualty records show one case where a defenseless little 40-acre tract was riddled with 25 deep holes. In other words, a good time was had by all—up to the time reckless drilling encountered its old friend 'dissipated gas energy.'"

Belt Probably Cause of Engine's Failure to Do Work Required

I am writing to find out if you can suggest the reason for trouble I am having with the engine I have hooked up to a power to pump eight wells on my lease. I bought the engine second-hand from an operator who used it to pump 10 wells on his lease, so there is no question as its being of sufficient horsepower, for the engine is in apparently perfect condition. It won't do the work when I have all eight wells hooked up. I believe I have all rod lines, swings, etc., set up properly.—T. D. O.

Particulars given regarding the engine referred to in the foregoing question have been omitted. It is believed they have nothing to do with its failure to pull the load imposed upon it. If the power used to pump these wells has been installed properly, with careful consideration of the various engineering details involved, it is believed probable that the cause of the trouble lies in the belt used. The fact that the engine was a used one need not keep the present owner from communicating with the manufacturers, who in all likelihood could arrive at the cause of the trouble more easily than anybody else. However, on the theory that the belt is the source of the engine's failure to do its work properly, the following from a paper written by George L. Reid is quoted here as likely to be helpful:

"It must be borne in mind that a chain is no stronger than its weakest link. Neither will a power pull more load than may be transmitted to it by the prime mover through the belt. Complaints sometimes come in that the operator has a 20-horsepower engine hooked to a power and that he does not need that much power and yet his power will not do the work. Assuming that the engine is in good condition, and that the power is somewhere near balance, the answer to his problem lies in the belt.

"Good grade oil country belting will transmit 1 horsepower per inch width for every 350 feet per minute of belt speed. It is at once obvious that a belt of sufficient width should be used if the power of the prime mover is to be used. Too narrow belting also is costly in that in trying to carry the extra horsepower imposed its fabric soon breaks down and it is destroyed. Wide belts always might be a good slogan for the oil industry when it comes to transmission problems.

"Power manufacturers know accurately the loads that may be imposed upon their powers. They therefore equip them with the proper diameter and face pulley so that it will function with the best economy. They also recommend the proper size prime mover and attempts to overpower the pumping unit will result in shorter life and unsatisfactory service. Similarly underpowering the power will result in lost production and poor economy. This underpowering will come from either too small an engine or too narrow a belt."

Why Was It Called That?

CARROTTE

In drilling logs from oil fields in foreign countries the word "carrotte" (or "carotte") often appears. To the American mind it suggests the familiar orange-red vegetable which Hollywood women are said to eat raw to improve the complexion. Mild wonder over the presence of the term in a well log is not lessened by the discovery, on consulting the dictionary, that our word "carrot" comes from the Greek through the Latin "carota" and the French "carotte." Further investigation, however, reveals that in various foreign tongues, as in English, the word is applied to something having the shape of a carrot. So drillers in other lands have adopted it to designate the cylinder of rock cut out by a drill and called in the United States a core. So "carrotte" (or "carotte") in the drilling log means the core from a core drill.

Chemicals Have Been Solution of Many Drilling Mud Problems

Although I have worked as a driller with cable tools only, I am interested in rotary drilling too, for I have an idea that I may go later to oil fields where the rotary is used. I want to ask you about the use of chemicals in drilling mud. I understand certain chemicals are put into the mud, but none of the men I have talked with seem to know the purpose of it, and I have talked with a few rotary drillers too. I will appreciate information on this point.—A. S. D.

The use of chemicals in treating drilling muds has provided a solution for various problems, but as there has been rather limited experimentation along this line, there are many operators who know little or nothing about what has been accomplished.

It has been established that by treating and conditioning the mud many troublesome conditions in drilling, particularly high gas pressures, porous formations and cavities, and even heaving shale, can be overcome. No one specific treatment can be followed in combating all these hazards, but tests have shown that by the use of different chemicals and admixtures drilling fluid of almost any desired chemical and physical characteristic can be built up. Thus, with certain chemical reactions in the mud, high gas pressures can be controlled; with others, the mud can fill porous formations and even cavities, and with others the effect of heaving shale can be counteracted.

Operators often are skeptical because formerly no such things were thought of and operators accepted the consequences when they ran into trouble. Also in the shallower drilling of earlier days difficulties were not so numerous nor so serious. But since the advent of deep drilling there is concern over high-pressure horizons, cavities and heaving shale.

M. T. Halbouty, geologist and petroleum engineer for the Yount Lee Oil Co., Beaumont, Tex., and a pioneer in the use of chemicals for conditioning drilling mud, points out that no two wells are exactly alike. Although the principle applied in fighting various conditions is the same in all cases, each affords a distinct problem, and few if any instances have been found in which the chemicals and formulas used in one well would work with equally satisfactory results in another. Yount Lee Oil does not confine its work to any certain chemicals and admixtures. Mr. Halbouty contends every chemical and admixture has some definite characteristic or property which can be used in overcoming some special condition. No one of these can be prescribed for any given condition because a reaction of a chemical to a given condition depends entirely on the characteristics and properties already present in the mud to be treated, and these characteristics and properties have been built up gradually in the course of drilling by many different treatments to overcome various conditions experienced previously.

Kansas Wildcats

(Continued from Page 69)

Wolf Creek Oil Co. et al's No. 1 Penn Mutual, SW cor. Sec. 22-15-15w. Moving in material.

SALINE COUNTY

Dieter et al's No. 1 Herrington, NE NW SE Sec. 3-13-1w. Drlg. 2,630 ft.

SEDGWICK COUNTY

Allison & Fitzwilliams et al's No. 1 Struthers, NE SW Sec. 34-28-2w. H.F.W. 3,176-87 ft.; T.D. 3,295 ft.; fishing.

Cameron, Derby Oil Co. and Trees' No. 1 Brainard, SW SE NW Sec. 19-24-2. Spudded and S.D.

Magnolia Pet. Co.'s No. 1 Bartholomew, SE SE SW Sec. 30-27-4w. Chat 3,683 ft.; 9-in. 3,693 ft.; standardizing.

SHAWNEE COUNTY

Jim Edwards' No. 1 Detrick, C NW NE Sec. 21-14-15. S.D. 630 ft.

STAFFORD COUNTY

Atlantic Oil Prod. Co.'s No. 1 Hohner, NW SE SE NE Sec. 31-23-14w. Siliceous lime 4,075-85 ft.; 1,500 ft. of wtr. in hole; cored to 4,090 ft.; T.D.; abd.

Atlantic Oil Prod. Co. and Phillips Pet. Co.'s No. 1 Guthrie, C NW NW Sec. 16-25-11w. Siliceous lime 4,104-08 ft.; wtr.; abd.

Lario O. & G. Co.'s No. 1 Tudormorgan, SE SE NW Sec. 23-24-13w. 15-in. pipe 330 ft.; drlg. 564 ft. Drlg. 2,295 ft.

SUMNER COUNTY

T. Palmer's No. 1 Wentworth, NW NW NE Sec. 9-35-2. Drlg. 3,475 ft.

Shell Pet. Corp.'s No. 1 Green, SE SW NW Sec. 3-33-2. Drlg. 560 ft.

Wakefield Pet. Co. et al's No. 1 Newton, SE Sec. 31-30-3. Rig.

D. J. Wilson et al's No. 1 Clark, 1,320 ft. from W and 25 ft. from S line of NW Sec. 15-35-1w. Building rig.

TREGO COUNTY

Central Commercial's No. 1 Wagg, NW NW SE Sec. 17-13-21w. T.D. 1,600 ft.; fishing.

Hanna & Leuck's No. 1 Lang, SE SE NW Sec. 1-14-21w. Cellar.

Jenmar Oil Co.'s No. 1 Jones, SE cor. Sec. 30-12-23w. Drlg. 3,735 ft.

Gulf Coast Wildcats

(Continued from Page 66)

ft. from N line and 312 ft. from E line of "B" lease, H. Griffith Sur. T.D. 5,200 ft.; I.P. 1,700 bbls. per day through ¾-in. choke.

Humble O. & R. Co.'s No. 8-B Kirby, 200 ft. N of No. 2, 100 ft. W of E line, Henry Griffith League. Drlg. shale and lime 4,053 ft.

McAlbert Oil Co.'s No. 3-B Heggins, 50 ft. S of N line and 50 ft. E of W line. Drlg. sand 1,048 ft.

Sun Oil Co.'s No. 15 Wilburn, 405 ft. from E and 50 ft. from W line of lease, Wm. Hodges Sur. Coring oil sand 5,258 ft.

Sun Oil Co.'s No. 17 Wilburn fee, 188 ft. E of W line and 40 ft. S of N line and 120 ft. W of No. 16. Drlg. salt 2,635 ft.

Texas Gulf Prod. Co.'s No. 12-A Kirby, 613 ft. N of S line, 85 ft. W of E line, W of Humble O. & R. Co.'s No. 8-B Kirby. Drlg. rock 2,058 ft.

Texas Gulf Prod. Co.'s No. 3 T. S. Fitzgerald, 340 ft. S of N line and 60 ft. E of W line of lease. T.D. 4,116 ft.; I.P. 542 bbls. per day through 5/16-in. choke.

Texas Gulf Prod. Co.'s No. 2 Morgan Fitzgerald, 400 ft. N of S line, C of Strip No. 3. Drlg. shale 4,986 ft.

Texas Gulf Prod. Co.'s No. 2 Fitz-Meadows, 281 ft. S of N line, 50 ft. W of E line of Lot of T. S. Fitz lot. Rig up.

Yount Lee Oil Co.'s No. 28 Chambers County, 50 ft. N of S line, direct offset to Sun's No. 10 Chambers County, Wm. Bloodgood Sur. Drlg. caprock 1,541 ft.

BIG CREEK—FORT BEND COUNTY

Trans-State Oil Co.'s No. 2 Ahlers, 85 ft. N of Gulf Stream, Inc.'s No. 1 Ahlers, Michael Young Sur. Spudded.

BOLING—FORT BEND COUNTY

Allied Minerals, Inc.'s No. 1 E. C. Farmer, James Scott League, 750 ft. SE of NW line and 150 ft. SW of NE line of Gulf Prod. Co.'s E. C. Farmer 50-ac. tract. Replugging the hole.

Irwin Larsen et al's No. 1 J. R. Farmer, 100 ft. NW and 100 ft. SW from E cor. of 125-ac. lease, James Scott Sur. Location.

Midland Oil Co.'s No. 1 P. F. Coulter, 150 ft. from S line, 4,174 ft. from W line of 100-ac. tract, Miller League No. 2. Set screen; T.D. 4,186 ft.

Navarro Oil Co.'s No. 1 H. R. Farmer, 800 ft. from SW line and 100 ft. from SE line of 165-ac. tract in James Scott Sur. Drlg. shale 2,536 ft.

Trans-State Oil Co.'s No. 1 Dipple, 480 ft. from NW and 347 ft. from SW lines of 33-ac. tract, E flank of dome. Fishing 3,300 ft.

ORCHARD—FORT BEND COUNTY

Gulf Prod. Co.'s No. 41 Moore, 3,372 ft. S along W line from NW cor. of James Frazier Sur., and 2,154 ft. at R/A. Abd. 2,841 ft.

Gulf Prod. Co.'s No. 42 Moore, 345 ft. S. 305 ft. W of SW cor. of E.M.G. Co. Sur. Drlg. caprock 1,610 ft.

Gulf Prod. Co.'s No. 43 Moore, 350 ft. E along S line of SW cor. of E.M.&G. Co. Sur. and 740 ft. N at R/A to said line of lease, 350 ft. E of No. 3 Moore. Rig up.

THOMPSON—FORT BEND COUNTY

Gulf Prod. Co. and Humble O. & R. Co.'s No. 24-A Booth, 486 ft. from N line of 1,107-ac. lease and 898 ft. W of No. 22-A, S. Kennedy Sur. Location.

HIGH ISLAND—GALVESTON COUNTY

Yount Lee Oil Co.'s No. 45 Cade. Drlg. shale and sand 3,938 ft.

Yount Lee Oil Co.'s No. 23 Smith. T.D. 4,956 ft.; running tubing.

Yount Lee Oil Co.'s No. 1-A Gordon-Viterbo, 133 ft. E of W line, 226 ft. S of N line of Lot 1, Martin Dunman Sur. Drlg. sand and lime 2,237 ft.

Yount Lee Oil Co.'s No. 1 Loustalbot, 300 ft. from N line, 131 ft. from E line of Lot No. 3, offset to No. 3 Stewart, Martin Dunman Sur. 9⅝-in. csg. at 1,678 ft.; T.D. 1,711 ft.

Yount Lee Oil Co.'s No. 1 F. C. Pabst, 1,186 ft. S of N line and 1,186 ft. E of W line of Lot 32, Martin Dunman Sur. Coring sand showing oil 4,004 ft.

Yount Lee Oil Co.'s No. 44 Cade. Testing; T.D. 5,145 ft.

DICKINSON—GALVESTON COUNTY

Humble O. & R. Co.'s No. 2-A Maco Stewart, 3,324 ft. S along E line of S bank of Bayou and 546 ft. W of E line at R/A, John Sellers Sur. Rig up.

Humble O. & R. Co.'s No. 1 Schaper, C 8½ of Blk. 15, or on line between Lots 3 and 4 and center N and S. W. K. Wilson Sur. Coring hard sand 3,461 ft.

Humble O. & R. Co.'s No. 1 H. O. and W. G. Jones, 750 ft. N of N bank of Bayou and center T and W, J. O. Sherman Sur. T.D. 3,037 ft.; cmtd. 7-in. csg. at 3,010 ft.; I.P. 40 bbls. per hr. through ⅝-in. choke.

Humble O. & R. Co.'s No. 1 A. P. Danielson, C of 20-ac. tract, Lots 5 and 6, C. A. Anderson Subd. of Lot 16, of the Righter Subd., John Sellers Sur. Recovered 8 stands of gas; cut mud from 3,740-3,803 ft.; coring hard sand 3,887 ft.

ARRIOLA—HARDIN COUNTY

Houston Oil Co. and Republic Prod. Co.'s No. 5-Y fee, E Arriola Sur. 13⅜-in. csg. 1,016 ft.; drlg. plug.

Republic Prod. Co's No. 11 fee, E. Arriola Sur. Rig up.

BATSON—HARDIN COUNTY

John Deering's No. 1 Bullock, 1,000 ft. N, 17 ft. E of middle line of 30-ac. tract, Bullock tract, Dondo Sur. Location.

John Deering's No. 2 Hooks. Drlg. shale 1,350 ft.

SARATOGA—HARDIN COUNTY

Rio Bravo Oil Co.'s No. 11-N Jordit, 300 ft. due W of No. 11-R Jordit. Clearing location.

SOUR LAKE—HARDIN COUNTY

Arlis Pet. Co.'s No. 1 Harkan and Langham. Dig pits.

Alpha Pet. Co.'s No. 2-A Wm. Weiss, 100 ft. W of No. 2. T.D. 6,808 ft.; set 5 9/16-in. drill pipe at 6,760 ft.; perforated csg. from 6,751-60 ft.; flowed estimated 50 bbls. per hr. through ½-in. choke; then sanded up.

Sun Oil Co.'s No. 2 Bernard Corp., 150 ft. from N and W lines of Lot 11, H.T.&B. Sur., Sec. 69. Swbg. 7,426 ft.

Texas Co.'s No. 317 fee, 165 ft. S of No. 262, 330 ft. E of No. 274. T.D. 1,800 ft.; P.B. to 1,463 ft.; 7-in. csg.; P.B. to 1,177 ft.; swbd. and flowed 10 bbls. per day.

GOOSE CREEK—HARRIS COUNTY

Humble O. & R. Co.'s No. 80 Simms-Smith, Scott Lower League, 1,000 ft. E of the most westerly W line, and 300 ft. N of the most northerly S line. T.D. 6,254 ft.; P.B. to 6,222 ft.

PIERCE JUNCTION—HARRIS COUNTY

Gulf Prod. Co.'s No. 38 Taylor. Drlg. shale 3,777 ft.

Rio Bravo Oil Co.'s No. 27-A Settegast, 377 ft. S, 553 ft. W of NE cor. of Settegast "A" tract, James Hamilton Sur. Standing 5,526 ft.

Rio Bravo Oil Corp.'s No. 9-A Settegast, 1,575 ft. N line, 350 ft. E line NE cor. "A" lease, J. A. Kopman Sur. T.D. 5,411 ft.; standing.

MYKAWA—HARRIS COUNTY

J. W. Falvey's No. 2 Minnetex, 150 ft. from S line and 87.5 ft. from E line of Blk. 192, Wm. Lovett Sur. Drlg. shale and lime 4,685 ft.

West Prod. Co.'s No. 1 Cora Holmes, C of 10ac. tract, A. J. Rothas Sur., Blk. 11. Drlg. shale and lime 3,658 ft.

West Prod. Co.'s No. 1 T. F. Reed, 403 ft. from E line and 270 ft. from N line of lease, F. J. Rothas Sur., Abstract 667, Blk. 8. Spudded.

TOMBALL—HARRIS COUNTY

Amerada-Stanolind O. & G. Co.'s No. 1 H. G. Felber, Elizabeth Smith Sur. Drlg. shale 5,214 ft.

Amerada-Stanolind O. & G. Co.'s No. 2 Bode, 500 ft. from N line and 500 ft. from W line of 40-ac. lease, J. M. Hooper Sur. T.D. 5,585 ft.; washing in.

Humble O. & R. Co.'s No. 1 Faris, 466 ft. from W line, 550 ft. from S line of 155-ac. tract, W. Uaner Sur. T.D. 5,557 ft.; 7-in. csg. 5,545 ft.; I.P. 2,-140,000 ft. of gas through ¼-in. choke; tubing pressure 1,750 lbs.

Humble O. & R. Co.'s No. 4-A Quilter, 1,-250 ft. from S line, 466 ft. from E line of 300-ac. tract, A. Senchel Sur. Running csg.; T.D. 5,564 ft.

Humble O. & R. Co.'s No. 2 Theis, 2,718 ft. from N line, 534 ft. from E line of tract, C. N. Piliott Sur. T.D. 5,566 ft.; 7-in. csg. 5,566 ft.

Humble O. & R. Co. et al's No. 3 Rudel, 1,750 ft. N of S line, 185 ft. E of W line of 90-ac. tract, J. House Sur. Drlg. shale 5,410 ft.

Humble O. & R. Co.'s No. 3 Treischel, 466 ft. from W line, 500 ft. from N line of 112-ac. Top oil sand 5,543 ft.; 7-in. csg. 5,536 ft.; T.D. 5,594 ft.; tested S.W.; deepened to 5,599 ft.; flowing 90% S.W. at rate of 16 bbls. per hr. through ¼-in. choke.

Texas Co.'s No. 3 Ziegler, 1,449 ft. E of W line and 446 ft. S of N line of lease, 930 ft. E of No. 1. Rig up.

KITTRELL—HOUSTON AND WALKER COUNTIES

Boone Bros.' No. 1 Trinity State Bank, Chas. McEllis Sur. D.D. after testing gas at 1,957 ft.

Humble O. & R. Co.'s No. 6 E. T. Shaw, 330 ft. from NW line, 990 ft. from SW line of lease, Charles McEllis Sur. Top sand 2,001 ft.; T.D. 2,011 ft.; I.P. 24 bbls. per hr. through ⅝-in. choke; tubing pressure 20 lbs.; csg. pressure 300 lbs.

Sun Oil Co.'s No. 2 Huffman, 660 ft. NW of No. 1, Charles McEllis Sur. Coring sand 1,962 ft.

VANDERBILT—JACKSON COUNTY

Imperator Oil Co.'s No. 1 Dutton, S C of Lot No. 11, Blk. 25, 450 ft. S of R.R. and 1,350 ft. W line of townsite, Ray Musquiz Sur. Rigged up and S.D.

Turman Oil Co.'s No. 1 T. H. Miller, 150 ft. each way out of E 50 ac. of Miller 100-ac. tract in Ray Musquiz Sur. Rigging up.

BIG HILL—JEFFERSON COUNTY

Yount Lee Oil Co.'s No. 1-A Pipkin, 2,640 ft. S and 2,050 ft. W of NE cor. of survey T.D. 6,341 ft.; whipstock at 6,040 ft.; drlg. shale 6,143 ft.

FANNETT—JEFFERSON COUNTY

Gulf Prod. Co.'s No. 16 Thomas, 650 ft. N of S line, 165 ft. W of E line of W. H. Smith League. T.D. 4,261 ft.; tested 1,000 ft. of oil on D.S. test; 7-in. csg. 4,230 ft.

CLEVELAND—LIBERTY COUNTY

Black Gold Pet. Oil Corp.'s No. 2 R. D. McDonald, 466 ft. W of most westerly E line and 466 ft. N of most northerly S line of survey, 933 ft. W of Gulf Prod. Co.'s No. 7-C Kirby Lbr. Co., T. Devore Sur. Derrick.

William J. Colegrove et al's No. 1 State School Land & Dev. Co., 446 ft. from W line and 170 ft. from S line of survey, Clayton Harper Sur. Location.

Gulf Prod. Co.'s No. 1 R. D. McDonald, 467 ft. from N and E lines of lease and survey, Chas. Smith Sur. Drlg. gumbo 672 ft.

ESPERSON—LIBERTY COUNTY

General Crude Oil Co.'s No. 21 Esperson. Drlg. shale 1,610 ft.

General Crude Oil Co.'s No. 1 W. D. Kay, Malcolm Duncan Sur., 1,537 ft. along N Drlg. shale 6,710 ft.

General Crude Oil Co.'s No. 10 Davis, 2,000 ft. from E line, 660 ft. from S line of D. Kokernut Sur. Drlg. shale 2,710 ft.

HANKAMER—LIBERTY COUNTY

Cretaceous Oil Co.'s No. 2 S. E. Exzell, 150 ft. S of N line, 100 ft. W of E line of Exzell's 75-ac. tract, Levi Barrow Sur. Location.

Gulf Prod. Co.'s No. 5 B. Gehr, 340 ft. from S line of lease, 640 ft. E of Naylor Oil Co.'s No. 7 Gehr, S. Kennedy Sur. Location.

Gulf Prod. Co.'s No. 1 Myers, 2,777 ft. W and 340 ft. N from SE cor. of 202-ac. tract, H. Christman Sur. Location.

Gulf Prod. Co.'s No. 4 Crow & Jacobs, 150 ft. E, 420 ft. N of SW corner of lease, Section 21, H & T C Survey. Cmtd. 7⅝-in. csg.; T.D. 4,293 ft.; made 50 bbls. per hr. then sanded up.

Gulf Prod. Co.'s No. 1 Hankomer, 350 ft. W, 430 ft. N of SE corner of Georgeringler Survey. Rig up.

Wilson-Broach Oil Co.'s No. 1 Barrow, 150 ft. N of S line, 100 ft. W of E line, W. M. Crook et al, Levi Barrow Sur. Derrick.

HULL—LIBERTY COUNTY

G. R. Brown and S. F. Bashara's No. 1 David Hannah, Jesse Devore league, 300 ft. S line, 150 ft. E line, 42-ac. Gulf tract Derrick.

Republic Prod. Co.'s No. 156 Delbear, 178 ft. W of No. 68, 130 ft. E of No. 63, J. Devore League Sur. Location.

Texas Co.'s No. 3 Barrow. 6⅝-in. csg. 3,819 ft.; S.D. 4,355 ft.

BUCKEYE—MATAGORDA COUNTY

United North & South Dev. Co.'s No. 1 Unit 4, Buckeye farm, J. C. Keller league 214 ft. N line and 202 ft. E line of lease Shut down.

CONROE—MONTGOMERY COUNTY

Humble O. & R. Co.'s No. 6 Pfaefflin, 413 ft. N of No. 1, 633 ft. from W line of lease, Wm. Real Sur. 10¾-in. csg. 1,292 ft.; drlg. shale 2,226 ft.

Houston Oil Co.'s No. 12 Cartwright, 933 ft. E of No. 11, 933 ft. N of No. 9. Drlg. shale 1,513 ft.

Sun Oil Co.'s No. 23 Foster, 799.5 ft. S of No. 13, 892 ft. W of No. 12, J. Brecker Sur. T.D. 5,140 ft.; I.P. 54 bbls. per hr. through ¾-in. choke.

Sun Oil Co.'s No. 22 Foster, J. Brecker Sur. Drlg. sand and shale 940 ft.

SPLENDORA—MONTGOMERY COUNTY

Bryce McCandless et al's No. 1 Texas Long Leaf Lbr. Co., 330 ft. from N and E lines of the W½ of Blk. No. 8, Walker County School Land Sur. Derrick.

ORANGE—ORANGE COUNTY

Trio Oil Co.'s No. 1 D. S. Comier, 69 ft. W of E line and 39 ft. S of N line of 6.83-ac. tract in W. M. Dyson Sur. Drlg. shale 2,910 ft.

TOM O'CONNOR—REFUGIO COUNTY

Quintana Oil Co.'s No. 7-A O'Connor, 1,400 ft. SE of section, 4,199 ft. from SE line of survey. Spudded.

Quintana Oil Co.'s No. 2-B O'Connor, 500 ft. from W line, 260 ft. from S line of M. L. White Sur. T.D. 2,762 ft.

Quintana Oil Co.'s No. 6-A O'Connor, J. M. Swisher Sur., Blk. 4. Prepare to spud.

PORT NECHES—ORANGE COUNTY

Port Neches Pet. Corp. et al's No. 1 W. B. Organ, 450 ft. from NE line and 150 ft. from NW line of A. Schramm Sur., S of Port Neches Field. Drlg. shale 2,666 ft.

Texas Co.'s No. 3-B Polk, 300 ft. S, 450 ft. W of SE cor. of Mary E. Hall Sur. No. 1. T.D. 5,933 ft.; pulled in derrick.

Texas Co.'s No. 3 Orange National Bank, 750 ft. S of N line and 295 ft. E of W line of lease, Jacob Beaumont Sur. Drlg. shale and lime 3,585 ft.

Texas Co.'s No. 4-B Polk, 750 ft. S and 1,-450 ft. W from NE cor. of lease, Jacob Beaumont Sur. Location.

Texas Co.'s No. 5-B Polk, 750 ft. S and 850 ft. W from NE cor. of lease, Jacob Beaumont Sur. Location.

Texas Co.'s No. 6-B Polk, 750 ft. S and 350 ft. W from NE cor. of lease, Jacob Beaumont Sur. Location.

LIVINGSTON—POLK COUNTY

Gem Oil Co.'s No. 4 Davis & Holmes, 683 ft. from W and 662 ft. from N line of survey, A. Viesca Sur. Rig up.

J. Z. Werby and Shell Pet. Corp.'s No. 4 Dick & Paling, 660 ft. NW of No. 3, 660 ft. from W line, A. Viesca Sur. Drlg. shale 3,510 ft.

GRETA—REFUGIO COUNTY

Hewitt & Daugherty's No. 12 Lambert. Rig up.

Humble O. & R. Co.'s No. 1-C O'Conner, 250 ft. from N line, 210 ft. from S line of M. S. Crunk and M. J. Ximines Sur. Top sand 4,358 ft.; 7-in. csg. 4,355 ft.; T.D. 4,372 ft.; I.P. 100 bbls. per day on ⅝-in. choke; tubing pressure 100 lbs.; csg. pressure 500 lbs.

Humble O. & R. Co.'s No. 19 Heard, 466 ft. from N line, 466 ft. from W line of John Peoples Sur. Rig up.

Humble O. & S. Co.'s No. 1 Marberry, 4,-558 ft. from S line, 466 ft. from W line of John Denn Sur. Rig up.

REFUGIO—REFUGIO COUNTY

Houston Oil Co.'s No. 18 P. B. Rooke, 330 ft. E of W line, 330 ft. S from N line in 200-ac. lease. Set screen and liner 4,935 ft.

Houston Oil Co.'s No. 19 P. H. Rooke, 660 ft. N of No. 18 P. H. Rooke. Drlg. shale 4,910 ft.

Houston Oil Co.'s No. 20 P. H. Rooke, 345 ft. NE of SW line, 137 ft. E of No. 15. Cmtd. surface csg.

Houston Oil Co.'s No. 21 P. H. Rooke, Thomas Mullen grant, 990 ft. from E line, 697 ft. SW from No. 18. Derrick.

United Gas Co.'s No. 10 Wilson Heard, runs 2,062 ft. along NE line Wilson Heard lease from S cor. of Houston Oil Co.'s F. V. W. Heard lease, 4,579 ft. to a point, thence at R/A to line 330 ft. to point of location. Derrick.

United Gas Co.'s No. 4 Mitchell, 150 ft. from NE cor. of 150-ac. lease. R.U. to W.O.

COLLETTO CREEK—VICTORIA COUNTY

American Liberty Oil Co.'s No. 2 Prybil, S of No. 1. Rig up.

Albert Plummer's No. 4 Terrell. T.D. 2,804 ft.; pulled screen.

Cox & Hooper's No. 2 Zimmer, 330 ft. from NW and SW lines of 125-ac. tract, Manchola Sur. Drlg. 1,200 ft.

McFADDIN-O'CONNOR DISTRICTS—VICTORIA AND REFUGIO COUNTIES

Sun Oil Co.'s No. 12 Janner. Running csg. 1,580 ft.

Texas Co.'s No. 9 McFaddin. Location.

LOUISE—WHARTON COUNTY

Pure Oil Co.'s No. 1 John Macha, 318 ft. from NW line and from SE line of F. Walnut Sur., and 467 ft. from NE line of 101.53-ac. lease, M.&C. Sur. No. 25. Location.

Pure Oil Co.'s No. 1 G. Wharton Est., 1,497 ft. from SW line and 318 ft. from SE line of F. Walnut Sur., Abst. A-36. T.D. 6,510 ft.; P.B. to 2,893 ft.

Pure Oil Co.'s No. 2 Stewart, Morris & Cummings Sur., Sec. 25, 990 ft. out of SW cor. of 160 acres. T.D. 5,141 ft.; testing.

Pure Oil Co.'s No. 3 Stewart, 1,000 ft. SW and 318.25 ft. SE from N cor. of W. L. Stewart's 160-ac. tract, Morris and Cummings Sur. No. 25. Location.

Pure Oil Co.'s No. 4 Stewart, 485 ft. SW, 330 ft. NW of E cor. of W. L. Stewart's 160-ac. tract, Morris and Cummings Sur. No. 25. 16-in. csg. 63 ft.

BAY ST. ELANE—TERREBONNE PARISH

Texas Co.'s No. 9 Bay St. Elane. Drlg. sand 6,170 ft.

CALLIOU ISLAND—TERREBONNE PARISH

Texas Co.'s No. 17 Calliou Island, Sec. 39-23-23.
Rig up.
Texas Co.'s No. 18 Calliou Island.
Drlg. shale 3,410 ft.

SOUTH LOUISIANA FIELDS
BLACK BAYOU—CAMERON PARISH

Shell Pet. Corp.'s No. "D" Watkins, 510 ft. S, 2,470 ft. W of NE cor. Sec. 18-12s-12w.
Cmtd. surface csg. 165 ft.
Shell Pet. Corp.'s No. 21 Watkins, 1,570 ft. E of NW cor. Sec. 17-12s-13w.
Building derrick.
Shell Pet. Corp.'s No. 3 State.
T.D. 6,260 ft.; waiting on cmt. to set.

BOSCO—ACADIA AND ST. LANDRY PARISHES

Superior Oil Prod. Co.'s No. 2 Malancon, 2,665 ft. S, 1,757 ft. W of NE cor. of Sec. 33-8s-3e.
Drlg. sand 730 ft.
Superior Oil Prod. Co.'s No. 1 Iseringhauser, 1,395 ft. E, 330 ft. N of SW cor. of N½ of NW¼ of Sec. 35-8s-3e.
Rig up.
Superior Oil Prod. Co.'s No. 6 Hermandez, 1,900 ft. S and 643 ft. E of NW cor. of Sec. 34-8s-3e.
Rig up.
Superior Oil Prod. Co.'s No. 2 Falls, 330 ft. N, 1,796 ft. W of SE cor. of Sec. 27-8s-3e. 13⅜-in. csg. at 1,235 ft.
Superior Oil Prod. Co.'s No. 5 Comeaux, 2,-878 ft. S, 1,062 ft. W of NE cor. Sec. 34-8s-3e.
Drlg. sandy shale 8,090 ft.
Superior Oil Prod. Co.'s No. 3 Arceneaux, 1,271 ft. S, 1,580 ft. W of NE cor. Sec. 33-8s-3e.
Drlg. shale 7,660 ft.
Superior Oil Prod. Co.'s No. 4 Comeaux, 1,-420 ft. S, 2 deg. W, 350 ft. S, 89 deg. E out of NW cor. NE¼ Sec. 34.
T.D. 7,845 ft.; 9⅝-in. csg. 7,835 ft.; I.P. 358 bbls. per day through 9/64-in. choke; tubing pressure 1,223 lbs.; csg. pressure 1,025 lbs.
Superior Oil Prod. Co.'s No. 3 Johnson, 1,-128 ft. N, 673 ft. E from SW cor. of NE¼ Sec. 34.
Drlg. sand 8,149 ft.
Superior Oil Prod. Co.'s No. 1 Coralie Domingua, 3,998 ft. S, 767 ft. W of NE cor. Sec. 34-8s-3e.
T.D. 8,740 ft.; 7-in. csg. 8,727 ft.; I.P. 126 bbls. per day through 8/64-in. choke; tubing pressure 1,050 lbs.; csg. pressure 1,-050 lbs.
Superior Oil Prod. Co.'s No. 7 Larcade, 2,-467 ft. E, 190 ft. N of SW cor. N½ NW Sec. 35-8s-3e.
T.D. 8,700 ft.; 7-in. csg. 8,680 ft.; I.P. 74 bbls. per hr. through 14/64-in. choke; tubing pressure 1,850 lbs.; csg. pressure 2,-700 lbs.
Superior Oil Prod. Co.'s No. 1 Moise LaVergne, 269.7 ft. W and 98 ft. N of SE cor. of Sec. 28-8s-3e.
Drlg. shale 8,208 ft.

DARROW—ASCENSION PARISH

Humble O. & R. Co.'s No. 5 Community, 228 ft. SW of NE line of section, 200 ft. at R/A to east bank of river, Sec. 33-10s-2e.
Moving in rig.
Humble O. & R. Co.'s No. 4 Community, 4,825 ft. from NE cor. and 288 ft. S of N line at R/A, Sec. 33-10s-2w.
Digging cellar.

EDGERLY—CALCASIEU PARISH

Emerson Oil Co.'s No. 1 Bright-Penn.
T.D. 3,727 ft.; pumping 240 bbls. per day.

CAMERON MEADOWS—CAMERON PAR.

Burton-Sutton Oil Co.'s No. 4 School Land, 3,891 ft. W and 150 ft. N of SE cor. of Sec. 16-4s13w.
Derrick.
Magnolia Pet. Co.'s No. 10 Cameron Meadows, 500 ft. S of No. 9.
T.D. 3,530 ft.; 9⅝-in. csg. at 3,512 ft.; I.P. estimated 600 bbls. per day.
Texas Co.'s No. 1 Miami Corp.
Drlg. shale 9,133 ft.
Texas Oil Co.'s No. 11 Calcasieu Lake.
Building derrick.

CHOCTAW DOME—IBERVILLE PARISH

Standard Oil Co.'s No. 5 Gay, 2,450 ft. S and 425 ft. E of NW cor. of NE Sec. 32-9s-11e.
Drlg. wtr. sand 2,840 ft.

DOG LAKE—TERREBONNE PARISH

Texas Co.'s No. 11 State, 150 ft. N and 2,474 ft. W, SE cor. Sec. 31-21s-16e.
Derrick.

GARDEN ISLAND BAY—TERREBONNE PARISH

Texas Co.'s No. 13 State, 3,391 ft. S and 1,-504 ft. W of NE cor. Sec. 107-23-32.
Rig up.

GUEYDAN—VERMILLION PARISH

Pure Oil Co.'s No. 6, Alliance Trust, 667 ft. E, 1,787 ft. S line of lease, Sec. 34-11s-1w.
Sidetracked at 7,960 ft.

HACKBERRY—CAMERON PARISH

Calcasieu Oil Co.'s No. 4 Hansen, 1,650 ft. W and 780 ft. N of SE cor. Sec. 11-12s-10w.
Drlg. sandy shale and lime 7,031 ft.
Calcasieu Oil Co.'s No. 3 H. C. Hansen, 150 ft. S and 150 ft. E of NW cor. of lease. Sec. 13-12s-10w.
Drlg. sandy shale 6,029 ft.
Gulf Prod. Co.'s No. 17 Erwin.
Drlg. sand and lime 5,369 ft.
Gulf Prod. Co.'s No. 14-B State, 610 ft. S, 1,366 ft. E of NE cor. Sec. 13-12s-10w.
Derrick.
Sutton Oil Co.'s No. 1 Ellender, 616 ft. S and 50 ft. E of NW cor. SW¼ SE¼ Sec. 32-12s-10w.
Drlg. sand 3,290 ft.
Sutton Oil Co.'s No. 2 Portier, 717 ft. S and 50 ft. W of NW cor. SW¼ SE¼ Sec. 32-12s-10w.
Location.
Texas Co.'s No. 14 State, 500 ft. SE of No. 13, Sec. 13-12s-10w.
Derrick.
Yount Lee Oil Co.'s No. 1-A Gulf Land, 2,000 ft. S and 50 ft. E of the NW cor of Sec. 22-12-10.
Rig up.
Yount Lee Oil Co.'s No. 12 Gulf Land, 1,625 ft. S and 350 ft. W of NE cor. of NW of Sec. 14-12s-10w.
T.D. 5,929 ft.; I.P. 869 bbls. per day through 5/16-in. choke.

NEW IBERIA—IBERIA PARISH

Harrison & Abercrombie's No. 3 Schwing, 500 ft. N and 50 ft. E of No. 2, Sec. 24-12s-5w.
Drlg. shale 6,210 ft.
Iberia Oil Corp. and Y. D. Spell's No. 2 Bernard, 150 ft. E of No. 1, Sec. 54-12s-7e.
Drlg. salt 3,849 ft.
Iberia Oil Co. and Y. D. Spell's No. 3 Bernard, 300 ft. N of No. 2, Sec. 54-12s-7e.
Drlg. shale 2,915 ft.
Texas Co.'s No. 1 Hanzen, NE along NW line of lease 508 ft., thence 150 ft. E at R/A, Sec. 54-12s-7e.
Drlg. sandy lime 7,707 ft.

IOWA—CALCASIEU AND JEFF DAVIS

Shell Pet. Corp.'s No. 2 Ardoin.
Building derrick.
Redrlg. hole 7,028 ft.
Shell Pet. Corp.'s No. 13 Hyde, 990 ft. S, 330 ft. E of NW cor. NE Sec. 13-9s-7w.
Cmtd. csg. 7,008 ft.
Shell Pet. Corp.'s No. 6 Stafford, 1,650 ft. from S line, 330 ft. W of NE cor. of lease, Sec. 18-9s-6w.
T.D. 6,783 ft.; drlg. out cmt.
Shell Pet. Corp.'s No. 14 Heyd, 330 ft. N, 1,319 ft. W of SE cor. of NE¼ Sec. 13. Coring shale and sand 6,653 ft.

JENNINGS—ACADIA PARISH

Simon-Tolson and Gardner's No. 1, 1,020 ft. due E and 250 ft. due W of SE cor. Sec. 46-9s-2w.
S.D. 1,870 ft.
Yount Lee Oil Co.'s No. 14 Housierre-Latrielle, 260 ft. N of No. 13, Sec. 47-9s-2w.
Sidetracking 7,541 ft.
Yount Lee Oil Co.'s No. 10 Housierre-Latrielle, 5,435 ft. due E, 1,070 ft. due N of SW cor. of section.
Swabbing 7,805 ft.

LAKE BARRE—TERREBONNE PARISH

Texas Co.'s No. 31 Lake Barre.
Drlg. lime rock 3,457 ft.
Texas Co.'s No. 14 Lake Barre.
D.S. stuck 2,999 ft.; P.B. and sidetracked; drlg sandy lime 2,600 ft.
Texas Co.'s No. 15 Lake Barre.
Drlg. anhydrite 3,364 ft.

LAKE PELTO—TERREBONNE PARISH

Texas Co.'s No. 12 Lake Pelto.
Reaming 6,838 ft.
Whitstone O. & G. Co.'s No. 1 Buckley, 300 ft. S and E of NW cor. SW SW Sec. 35-19s-16e.
T.D. 3,390 ft.; P.B. to 3,053 ft.; fishing.

LAKE WASHINGTON—PLAQUEMINES PARISH

Humble O. & R. Co.'s No. 23 Cockrell-Moran, 650 ft. N and 21 deg. 30 min. E of No. 3 in Twp. 20s-26e.
Drlg. shale 1,805 ft.

LEESVILLE—LAFOURCHE PARISH

Gulf Prod. Co.'s No. 5 Bernard.
T.D. 3,833 ft.; I.P. 400 bbls. through 3/16-in. choke.
Gulf Prod. Co.'s No. 10 Bernard, 1,833 ft. E, 958 ft. S of NW cor. Sec. 26-21s-22e.
Derrick.
Emerald Pet. Co.'s No. 10 State, west bank, 300 ft. S of well No. 1.
Location.
Emerald Pet. Co.'s No. 11 State, east bank, 227 ft. N of well No. 1.
Location.
Emerald Pet. Co.'s No. 12 State, east bank, 250 ft. S of well No. 1.
Location.
Lincoln Oil Co.'s No. 5 State.
Location.
Texas Co.'s No. 31 Leesville.
D.S. stuck 3,619 ft.; washing over.
Texas Co.'s No. 23 Leesville.
Rig up.
Texas Co.'s No. 27 Leesville.
Bldg. derrick.
Texas Co.'s No. 30 Leesville, 1,075 ft. S, 310 ft. E NW cor. Lot 6, Sec. 26-21s-22w
T.D. 4,361 ft.; P.B. and drilled to 3,669 ft.; swabbing.

LOCKPORT—CALCASIEU PARISH

Magnolia Pet. Co.'s No. 5-A Farquar (W.O.).
Drlg. shale 6,675 ft.
Magnolia Pet. Co.'s No. 8 Farquar (W.O.).
Cutting and pulling screen; T.D. 6,716 ft.
Magnolia Pet. Co.'s No. 7 Farquar (W.O.).
T.D. 4,818 ft.; to deepen.
Magnolia Pet. Co.'s No. 14 Miller (W.O.).
T.D. 4,389 ft.

PORT BARRE—ST. LANDRY PARISH

Gulf Prod. Co.'s No. 11 Wilson Cochran, 1,-500 ft. S, 9 deg., 6 min. W from most southerly NE cor. of Texas Co.'s Botnay Bay lease, Sec. 4-6s-5e.
Drlg. shale 3,310 ft.

ROANOKE—JEFFERSON DAVIS PARISH

Humble O. & R. Co.'s No. 1 Clayton, 2,080 ft. S and 440 ft. W, NE cor. Sec. 10-9s-4w.
Rig up.
Humble O. & R. Co.'s No. 3 Devilbiss, 1,399 ft. W. 466 ft. S of NE cor. Sec. 14-9s-4w.
T.D. 9,216 ft.; perforated csg. from 9,198-9,203 ft.; running tubing.
Shell Pet. Corp.'s No. 1 Jarnigan, 330 ft. E. 660 ft. S. NW cor. Sec. 13-9s-4w.
D.S. stuck; T.D. 10,001 ft.
Shell Pet. Corp.'s No. 1 Carter, 660 ft. N and 330 ft. W of SE cor. NW Sec. 1-9s-4w.
T.D. 8,697 ft.; cmtd. csg.
Shell Pet. Corp.'s No. 3 Kratzer, 1,320 ft. E and 440 ft. N of SW cor. of lease.
Drlg. sand 1,064 ft.

STARKS—CALCASIEU PARISH

Gulf Prod. Co.'s No. 33 Lutcher Moore, Sec. 19-9s-8w.
Drlg. shale 3,656 ft.

SWEET LAKE—CAMERON PARISH

Pure Oil Co.'s No. 12 Yount Lee Oil Co., 300 ft. S of No. 11, in line with Nos. 9 and 11, Sec. 12-12s-3w.
Fishing 5,196 ft.

SULPHUR—CALCASIEU PARISH

Union Sulphur Co.'s No. 1 Noble (W.O.).
Drlg. sandy shale 5,417 ft.
Union Sulphur Co.'s No. 724 fee.
Drlg. sandy shale 4,158 ft.
Union Sulphur Co.'s No. 807 fee.
Drlg. sand and shale 2,764 ft.
Union Sulphur Co.'s No. 790 fee, 929 ft. S and 802 ft. W of C Sec. 29-9s-10w.
Perforated csg. from 5,056-66 ft.; prepare to test.

WHITE CASTLE—IBERVILLE PARISH

Shell Pet. Corp.'s No. 1 White Castle Shingle Co., 1,330 ft. W, 100 ft. S from NE cor. of lease.
Reaming 5,492 ft.
Shell Pet. Corp.'s No. 1 Adams, 2,340 ft. N, 100 ft. E of SW cor. of lease.
Drlg. shale and sand 3,197 ft.

MISCELLANEOUS WILDCATS
TEXAS
BRAZORIA COUNTY

Amerada Pet. Corp.'s No. 1 Houston Farm Dev. Co., 1,414 ft. N, 316 ft. W of SE cor. of L. Bacheider Sur.
Ran 302 ft. of 7-in. liner; D.S. stuck; prepare to wash over fish; T.D. 6,992 ft.; sand; fishing.
George Strake's No. 2 Truska, 991 ft. W of No. 1, H.T.&B. Sur., Sec. 7.
S.D. 6,000 ft.
Holt et al's No. 1 Griffith, J. B. Bailey Sur.
T.D. 4,200 ft.; waiting orders.
Showers & Moncrief's No. 1 Hughey, 5,500 ft. NW of discovery well, in center of Lot 18, H.T.&B. Sur., Sec. 29, Abst. 293.
Location.
Texas Co.'s No. 1 Freeport Sulphur Co., 2,-764 ft. N, 1 deg., 40 ft. W and 1,134 ft. S, 88 deg., 20 ft. W of NW cor. of S. F. Austin Sur., Abst. No. 35, being in the Conception Areola Sur.
Rig up; prepare to spud.

CALHOUN COUNTY

Continental Oil Co.'s No. 2 American National Realty Co., 660 ft. from NW line, 660 ft. from NE line of Sec. 6, Blk. C, Pedro Garcia Sur.
Derrick.
Steinberger Pet. Co.'s No. 1 W. A. Shofner, 330 ft. from S and E lines of 100-ac. tract in M. Sanches Sur.
Drlg. sandy lime 5,320 ft.

CHAMBERS COUNTY

Humble O. & R. Co.'s No. 1 Middleton, 466 ft. each way out of the SW cor. of survey. 7,088 ft.; flowing 12 bbls. per hr.; tubing pressure 1,550 lbs.; csg. pressure 2,300 lbs.
South Gulf Oil Co.'s No. 1 J. T. White, Lake Brian Sur., 460 ft. from N line, 460 ft. from W line of 47.9-ac. tract.
Rig up.
Sun Oil Co.'s No. 1 Hamilton, 1,400 ft. from N line, 1,400 ft. from W line of survey T.&N.O. Sur., Sec. 128.
T.D. 9,066 ft.; in heaving shale; pulled up to 7,800 ft.; working on mud.

FORT BEND COUNTY

W. A. Shafer et al's No. 1 V. B. Bortaah, 693 ft. SW of NE line and 1,003 ft. NW of SE line of Sec. 52, H.&T.C. Sur.
S.D. 3,900 ft.
Turnbull & Irwin's No. 1 Herman Hospital, 100 ft. W of E line, 350 ft. N of SL of 446-ac. tract, J. H. Cartwright Sur.
Drlg. lime 4,412 ft.
George White et al's No. 1 M. M. Cravins, 1,000 ft. from N, 300 ft. W of SW cor. of survey, B.B.B.&C. Sur. No. 8.
Rig up.

GALVESTON COUNTY

Gillock Pet. Co.'s No. 2 Maco Stewart, 901 ft. N and 150 ft. W of No. 1, Alex Farmer Sur.
T.D. 1,500 ft.; waiting on surface pipe; S.D.
Texana Gulf Oil Corp.'s No. 1 Thomas Shaw (200 acres), 150 ft. NW line, 165 ft. NE line, Lot 66, Sec. 7, Hall & Jones. Galveston Island.
Abd. 6,512 ft.

GRIMES COUNTY

Anderson & Kerr Drlg. Co.'s No. 1 R. Lueders, 500 ft. S of N line, 1,200 ft. E of W line of 320-ac. tract and survey, Blake Brantley Sur., 2½ miles SW of Plantersville.
Location.
Hubert Holt et al's No. 1 Simon Fuqua, 1,200 ft. N of S line and 400 ft. W of E line of 177-ac. lease and survey, Moses Evans Sur.
S.D. 3,080 ft.
Dr. Marshall et al's No. 1-B Todd, 300 ft from E line and 175 ft. from N line of 150-ac. tract in extreme NW cor. of county (25 ft. N of No. 1).
S.D. 2,005 ft.
Roan et al's No. 1 S. W. Sealy, 3,474 ft. N of S line and 350 ft. E of W line of survey, B. F. Smith Sur., 3 miles SW of Kellum Springs.
S.D. 2,650 ft.

HARDIN COUNTY

Frazier & Greer's No. 1 Sternberger Lbr. Co., 1,325 ft. S and 400 ft. W of the NE cor. of a 115-ac. tract, J. Pearson Sur.
Derrick.

HARRIS COUNTY

Cockburn Oil Co. and Frazier's No. 1 Herman Hospital, 210 ft. N, 300 ft. W of SE cor. of tract, William Hardin Survey.
Abd. 7,577 ft.
Esco Oil Co.'s No. 1 E. P. Seureau, 3,385 ft. from W line and 2,215 ft. from S line of 350-ac. tract, W. P. Harris Sur. Abst. A-30.
Abd. 6,023 ft.
Eureka Heights' No. 1 Varner, 400 ft. from S line of 107.22-ac. tract and 4,178 ft. from E line of H. Rinerman Sur.
Drlg. shale 3,122 ft.
T. S. F. Oil Co.'s No. 1 J. B. Hine, Arthur McCormick Sur., Abst. 46.
T.D. 3,525 ft.; 7-in. csg. 3,503 ft.; prepare to drill plug.
C. C. Foster et al's No. 1 H. K. Johnson, 2,000 ft. from S line and C of E and W lines of G.C.&S.F. Sur.
Drilled 25 ft. and S.D.
Johnston & Johnston's No. 1 Fee land, 330 ft. S, 300 ft. E of NW cor. of 20-ac. tract, Sur., Sec. No. 5.
Building derrick.
Hill & Hill's No. 1 Wharton, 466 ft. from NW cor. Sec. 5, W.C.R.R. Sur.
Drlg. shale 6,603 ft.
W. U. Paul's No. 2 House, 100 ft N of No. 1, M. Magruder Sur.
Coring shale 7,489 ft.

HOUSTON COUNTY

Adams et al's No. 1 Sanders, 330 ft. from S line, 330 ft. from W line of 55-ac. tract of lease, J. Thomas Sur.
T.D. 2,850 ft.; to make electrical coring test.

JACKSON COUNTY

A. M. Harris' No. 1 Whitley, 300 ft. out of SE cor. of F. G. Keller Sur.
Location.
Shell Pet. Corp.'s No. 1 W. W. McCrary, 460 ft. out of SE cor. of 50-ac. tract, A. Kountze Sur.
Drlg. shale, streaks of lime 3,300 ft.

JASPER COUNTY

Republic Prod. Co. and Houston Oil Co.'s No. 1 Sabine Tram. Co., 330 ft. out of NW cor. Sec. 71, H.&T.C. Sur.
13⅜-in. csg. at 1,823 ft.; drlg. plug.

JEFFERSON COUNTY

Sun Oil Co.'s No. 1 H. Long, 1,500 ft. E line, 990 ft. E line of lease.
Underreamed from 8,500-8,540 ft. and cmtd. back to 8,480 ft.; setting 5-in. screen; swbd. down to 6,100 ft.; no wtr.; no oil.
Sun Oil Co.'s No. 1 Robert & Braussard, 8,-890 ft. NW along SW line and 660 ft. NE at right angles to SW line, B. Blackman Sur., Abst. No. 2.
Rig up.

LIBERTY COUNTY

R. M. Bruner et al's No. 1 N. Bell, 150 ft. from N line and 150 ft. from W line of Bell's 187-ac. tract, H.&T.B. Sur. No. 4.
Rigging up.
Extension Oil Co.'s No. 1 J. A. Lovett, 330 ft. from E and 600 ft. from S line of lease, P. P. Deevers Sur.
T.D. 4,048 ft.; to install heavier rig.
J. W. Frazier et al's No. 2 Lynott & Buffum, 466 ft. from N and E lines of 60-ac. tract in extreme SE part of survey, James Robeson Sur.
Clearing location.
Liberty-Independent Oil Co.'s No. 1 J. M. Neal, 3,550 varas from E line and 500 varas from N line of Samuel Strong Sur.
Drlg. shale 3,910 ft.
A. L. Maxwell's No. 1 M. P. Hinchliff, 300 ft. from E line and 1,000 ft. from the N line of survey, H.&T.C. Sur., Sec. 10a.
Waiting on csg. 580 ft.
Thomas et al's No. 1-A Eicke, 660 ft. from W line and 2,350 ft. from S line of tract in Green Sur.
T.D. 5,047 ft.; 6⅝-in. csg. at 5,029 ft.

MADISON COUNTY

Madisonville Pet. Co.'s No. 1 Cannon, 660 ft. N of S line, 440 ft. E of W line of 185-ac. tract, J. V. Phillips Sur.
Location.

MATAGORDA COUNTY

Cockburn Oil Co.'s No. 7 Hawkins, 150 ft. NW of No. 6 Hawkins Sur., D. McCarthy Sur.
Skidding derrick.
Dr. Griffith's No. 1 fee, 3,000 ft. from E line and 3,000 ft. from W line of Wm. H. Bell Sur.
Rigging up and S.D.
Horace M. Smith, Inc.'s No. 1 Wadsworth ranch, 150 ft. out of S cor. of Lot No. 2, Blk. S, R. Fisher Sur.
Drlg. shale 5,950 ft.

MONTGOMERY COUNTY

Travis Baker et al's No. 1 Foster Estate, 1,200 ft. E of W line and 700 ft. S of N line of Blk. No. 50, J. M. De La Garsa Sur.
Derrick.
Reynolds Drlg. Co. et al's No. 1 Mrs. Clara B. Stewart, 330 ft. S and E of most easterly inner cor. of 595-ac. tract, John Corner Sur.
S.D. 5,500 ft.
Trans State Oil Co.'s No. 1 Foster, 700 ft. E of W line, 2,000 ft. N of S line, Lot 27.
Drlg. shale 2,223 ft.
Woodard-Smith-Cooper's No. 1 J. V. Scott, F. A. B. Wheeler Sur.
7-in. csg. 3,137 ft.

ORANGE COUNTY

Blue Line Oil Co.'s No. 1 Godwin, Richard Ballew Sur., 300 ft. from E line and 150 ft. from NE line of Godwin 20-ac. tract.
S.D. 2,770 ft.
Ellis Oil Co.'s No. 1 G. W. Pell, 100 ft. from N and 300 ft. from W line of Pell tract in the J. M. Henerie Sur.
Drlg. shale 1,710 ft.

POLK COUNTY

Howard Dailey et al's No. 1 Z. B. Knox, 1,450 ft. W and 1,920 ft. S of NE cor. of F. Chairs Sur., 16 miles NE of Cerrigan.
S.D. 60 ft.
J. F. Anderson's No. 1 E. L. Duke (O.W.D. D.), 400 ft. from E and 350 ft. from S of SW cor. of P. Michelick 50-ac. lease, Abst. 59, P. J. Mineral Sur.
Waiting on a new mud pump; T.D. 5,304 ft.
Kirby Pet. Co.'s No. 1 Kirby Lbr. Co., 1,-200 ft. N, 40 deg. W from NE cor. of Geo. Loving Sur., Abstract 402, thence 330 ft. NE at R/A T. F. Pickney Sur.
Building derrick.
J. W. Leggett et al's No. 1 Bergman, C of 324-ac. tract, or 1,100 ft. W of H.E.&W.T. R.R., J. T. Pinkney Sur.
Rig up.
Dick Schwab's No. 1 Lynch, 330 ft. out of NW cor. of 200-ac. tract in the George Jameson Sur.
Location.

E. A. Thompson's No. 1 Haynes, 990 ft. out of NW cor. of 320-ac. tract and survey, J. Whitmire Sur., E of Leggett.
Drlg. shale 706 ft.

REFUGIO COUNTY

Cecil Hagen et al's No. 1 Edith Clarkson, 1,736 ft. from N line, 3,826 ft. from E line of J. Coughlin Sur.
Location.
Magnolia Pet. Co.'s No. 1 Woods, 330 ft. from S and W lines of S. Turner Sur.
Drlg. 1,210 ft.

SAN AUGUSTINE COUNTY

Fidelity Exploration Co.'s No. 2 Bryan & Flournoy, 400 ft. from No. 1.
T.D. 1,565 ft.

SAN JACINTO COUNTY

Ralph Sturam et al's No. 1 R. B. Love et al, 475 ft. S of N line and 2,000 ft. W of E line of 177-ac. tract, Drury McGee Sur.
Location.

TRINITY COUNTY

Boone Bros.' No. 1-C Texas Long Leaf Lbr. Co., C of 80-ac. tract, Martines Sur.
Lost hole 1,230 ft.; skidded 14 ft. west; S.D. 2,240 ft.

WALKER COUNTY

Boone Bros.' No. 1-D Texas Long Leaf Lbr. Co., 330 ft. E and 275 ft. N of SW cor. of 112.6-ac. tract, Mary Milsap Sur.
Rig up.
S. E. Gray's No. 1 Winzell, 1,200 ft. N and 1,000 ft. E of most southerly S line of survey.
Derrick.

WALLER COUNTY

Smith et al's No. 1 J. S. Garrett, 4,840 ft. NW and 325 ft. NE from SE cor. of S. M. Williams Sur., 3 miles N of San Felipe.
Drlg. shale 4,415 ft.

WASHINGTON COUNTY

Arkansas Fuel Oil Co.'s No. 1 Witschark, 100 ft. NW of Bruton, 100 ft. S of the center of a 65-ac. tract, J. D. Miller Sur.
Drlg. shale 2,310 ft.

WHARTON COUNTY

John Deering's No. 1 C. T. and D. Kountze, 1,320 ft. from N line, 330 ft. from E line of S.A.&M.G. Sur., Sec. 1, Abst. 328.
Coring sand 6,225 ft.
Texas Co.'s No. 1 Pierce Estate, 4,850 ft. S, 34 deg. E and 4,300 ft. N, 56 deg. E from W cor. of Tract 2, I.&G.N. Sur. No. 38.
Drlg. sand and lime 4,516 ft.

SOUTH LOUISIANA
ACADIA PARISH

Humble O. & R. Co.'s No. 1 American Rice Mills, 660 ft. S and 1,320 ft. W from NE cor. Sec. 27-10s-1e.
Reaming 8,768 ft.
Superior Oil Co. et al's No. 1 A. S. Newman, 2,000 ft. N and 1,120 ft. E of SW cor. Sec. 24-7s-1w.
Drlg. shale 5,367 ft.

AVOYELLES PARISH

Bell Drlg. Co.'s No. 2 Thompson, 450 ft. S, 360 ft. E, NW cor. NE¼ Sec. 11-3n-5e.
Rig up.
Southern State Pet. Co.'s No. 1 Boyette, 330 ft. N and 330 ft. E of SW cor. Sec. 28-3n-5e.
S.D. 3,427 ft.

BEAUREGARD PARISH

Chew & Kirby's No. 1 Long Bell Lbr. Co., 330 ft. S and W of C of NE¼ Sec. 26-2s-8w.
Rig up.
Richardson & Martin's No. 1 Southwest Lbr Location.

CALCASIEU PARISH

Fred Oil Co.'s No. 3 Falzst, 262 ft. E and 53 ft. S of NW cor. SE¼ Sec. 26-8s-10w.
Spudded and S.D.
Fohs Oil Co.'s No. 1 McIvor, 330 ft. S and W of NE cor. Sec. 14-9s-8w.
Location.
Fohs Oil Co.'s No. 2 Castle, located in C of NE¼ of SW¼ Sec. 14-9s-8w.
Drlg. shale 4,465 ft.
Fohs Oil Co.'s No. 3 Castle, 990 ft. due E of producer in SW¼ Sec. 13-9s-8w.
Drlg. shale 6,290 ft.
Fohs Oil Co.'s No. 4 Castle, 330 ft. S and 330 ft. W of C Sec. 13-9s-8w.
Drlg. sandy shale 6,951 ft.
Gulf Prod. Co.'s No. 1 H. Starks et al, 1,650 ft. W and 1,980 ft. S of NE cor. Sec. 26-11s-12w.
Drlg. shale 3,195 ft.
Nicholas McCaleb's No. 1 Grey, 2,200 ft. S, 1,200 ft. E of NW cor. Sec. 22-8s-13w.
Drlg. 605 ft.
Texas Co.'s No. 1 Nickerson, 3,139 ft. N and 3,238 ft. W of SE cor. Sec. 12-9s-8w.
T.D. 6,721 ft.; 7-in. csg. 6,709 ft.; blowing dry gas with 2,400 lbs. of pressure; 14/64-in. choke.
Union Sulphur Co.'s No. 3 State, 2,135 ft. S, 2,340 ft. E of NW cor. Sec. 12-9s-4w.
Location.
Union Sulphur Co.'s No. 1 Castle, 326 ft. N and E of NW Sec. 13-9s-8w.
Drlg. sand 7,083 ft.
Union Sulphur Co.'s No. 1 Buhler, 1,485 ft N and 425 ft. W of SE cor. Sec. 11-9s-8w.
Drlg. sandy shale 7,139 ft.
Union Sulphur Co.'s No. 3 Barbe, 396 ft. N and 329 ft. W of SE cor. of NE¼ Sec. 11-9s-8w.
Drlg. sand and boulders 2,016 ft.
Union Sulphur Co.'s No. 1 Reeves-Mayo, 650 ft. NE of discovery.
Building derrick.
Union Sulphur Co.'s No. 2 Castle, 660 ft. E of No. 1 Castle.
Drlg. sandy lime 5,933 ft.
Wheeler Oil Co.'s No. 1 Gabbert, 1,322 ft E and 548 ft. N of SW cor. of Sec. 28-9s-7w.
Coring shale 3,600 ft.

EAST FELICIANA PARISH

Thompson Creek Oil Co.'s No. 1 Fannie Noland, 2,600 ft. E and 1,580 ft. N of SW cor. Sec. 70.
Washing over stuck D.S.; T.D. 1,490 ft.

CAMERON PARISH

Texas Co.'s No. 1 Jessen, 1,170 ft. E and 550 ft. N of C Sec. 24-14s-10w.
Drlg. shale 8,974 ft.

JEFFERSON DAVIS PARISH

George W. Strake's No. 1 Calcasieu Natl. Bank, 300 ft. S and E of NW cor. SE NE Sec. 12-9s-6w.
T.D. 8,091 ft.; P.B. to 7,550 ft.; drlg. shale 8,135 ft.

JEFFERSON PARISH

Lincoln Oil Co.'s No. 1 Rigaud, Sec. 28-21s-25e.
Drlg. shale 4,310 ft.
Texas Co.'s No. 1 Bayou St. Dennis, 20,907 ft. S, 4,853 ft. E of NW cor. of Twp., Sec. 19-17s-24e.
Drlg. sand and lime 7,134 ft.

LAFOURCHE PARISH

Southern Sulphur Corp.'s No. 1 D. L. Lagraize, 800 ft. E of NW cor. of Lot 7, thence 250 ft. S of Sec. 26-21s-22e.
Spudded and shut down.

PLAQUEMINES PARISH

Venice Corp.'s No. 1 Burras.
S.O. 2,040 ft.

RAPIDES PARISH

J. B. Evers' No. 1 G. Wettermark, 540 ft. S and 520 ft. E, NW cor. NE SW Sec. 35-6n-2e.
Location.
C. D. Loe's No. 1 Barrett, 320 ft. NW of SE line and 880 ft. NE of SW line of Sec 40-5n-1w.
S.D. 3,500 ft.
Williams-Terrell & Day's No. 1 Armstrong & Murphy, 286 ft. N and 300 ft. W of SE cor. Sec. 24-5n-1w.
Moving in rig.

ST. BERNARD PARISH

Danciger's No. 1 Battles, 836 ft. N, 2,198 ft. W of SE cor. Sec. 135-14s-14e.
Cmtd. csg.; moved off rig; T.D. 6,001 ft.

ST. MARTIN PARISH

Texas Co.'s No. 1 State-Plumb Bob, 3,107 ft. E and 2,154 ft. N of SW cor. Sec. 9-8s-7w.
20-in. csg. at 101 ft.

TANGIPOHA PARISH

R. A. Conklin's No. 1 Lake Superior Piling Co., 200 ft. W and N of SE cor. Sec. 19-5s-9e.
S.D. 850 ft.

VERMILLION PARISH

Moore Bros.' No. 1 Brussard, 350 ft. S of N line, 250 ft. E of W line, NE cor. Sec. 32-11s-3e.
S.D. 4,056 ft.

La.-Ark. Wildcats

(Continued from Page 68)

P. G. Fraley et al's No. 1 G. R. Stell, 330 ft. S and W, NE cor. Sec. 5-12-16.
Rigging up.
Hester et al's No. 1-A T. R. Alston, 360 ft. S, 330 ft. W, C Sec. 11-11-16.
Drlg. 1,893 ft.
Leslie Prod. Co.'s No. 1 Ramsey, 150 ft. N and W of C Sec. 36-11-11.
Set 10-in. 45 ft.
C. T. Ruffin's No. 1 J. M. Nabors, 300 ft. S and E, NW cor. SW Sec. 32-13-11.
S.D. 2,685 ft.
Ben F. Smith's No. 1 Bonds, 200 ft. E, 500 ft. N, SW cor. Sec. 23-12-11.
S.D. 2,749 ft.
National Oils, Inc.'s No. 1 B. Y. Wemple, NW SW Sec. 14-12-11.
S.D. 120 ft.

EAST CARROLL PARISH

Century Oil & Drlg. Co.'s No. 1 Olive Dell, 660 ft. S, 300 ft. W, NE cor. Sec. 56-21-21e.
S.D. 150 ft.

GRANT PARISH

C. & S. Oil Corp.'s No. 1 Swope, Sec. 17-19-1e.
Rigging up

LA SALLE PARISH

F. A. Trichello's No. 1 Urania, Sec. 3-9-1e.
S.D.; junked hole 1,491 feet.

NATCHITOCHES PARISH

Clyde Crichton's No. 1 Friedman Est., 406 ft. N. 428 ft. E, SW cor. Sec. 52-7-6.
S.D. 2,934 ft.
Missouri Drlg. Co.'s No. 1 Brown Lbr. Co., 400 ft. N, 330 ft. W, SE cor. Sec. 5-10-10.
S.D. 1,033 ft.
Roy A. Raines et al's No. 1 Raines est., 330 ft. N and E, SW cor. Sec. 8-9-10.
Fishing for D.S. 3,540 ft.

OUACHITA PARISH

J. F. Farrell et al's No. 1 State of La., 3,345 ft. N, 2,013 ft. W, from common cor. Sec. 49-20-4e.
Drlg. 100 ft.

RAPIDES PARISH

C. D. Loe, trustee's No. 1 Baird Est., SE cor. Sec. 40-5n-1w.
Fishing for D.S. 4,290 ft.
Williams-Carroll & Day's No. 1 Armstrong & Murphy, 286 ft. N, 300 ft. W, SE cor. Sec. 24-5n-1w.
Moving in rig.

RED RIVER PARISH

J. S. Tuffree's No. 1 Wilkinson, 1,320 ft. S and W, NE cor. Sec. 11-12-11.
S.D. for fuel 1,330 ft.

SABINE PARISH

H. J. Brothers et al's No. 1 Edwards, 300 ft. S and W, NE cor. SW NW Sec. 29-9-13.
Pumped off; S.D.; W.O. 1,887 ft.
Crescent Drlg. Co.'s No. 3 Garner, Sec. 3-7-11.
Rig moved; location.
M. T. Hines' No. 1 J. B. Hill, SW NE Sec. 4-6-11.
Set 10-in. 41 ft.
Helena Oil & Gas Co.'s No. 1-B Graham, 330 ft. S and W NE cor. NE NW Sec. 20-9-13.
Dry and abd. 2,000 ft.
Lawson-Leavell's No. 1 Whitney Corp., 330 ft. N and E, SW cor. NE SW Sec. 5-9-13.
Coring 3,172 ft.
Jack Lent's No. 1 Williams, Sec. 13-7-11.
S.D. 950 ft.
Dave McConnell's No. 1 Whiting Corp., Sec. 3-9-13.
W.O.S.R. 1,956 ft.
Strickland et al's No. 1 Whitney Corp., Sec. 32-10-12.
Recmt. 8-in.; T.D. 1,590 ft.

UNION PARISH

Southern Carbon Co.'s No. 66 fee, 660 ft. S, 1,980 ft. E, NW cor. Sec. 5-20-4e.
Moving in rig.

WEBSTER PARISH

Virgil Likens' No. 1 E. L. Stewart, 1,020 ft. E, 600 ft. S of NW cor. Sec. 23-18-10.
Rigging up.

ARKANSAS
ARKANSAS COUNTY

Grand Prairie Realty Co.'s No. 1 Fischer, 200 ft. S and E, NW cor. NE NW Sec. 6-6s-4w.
S.D. 3,120 ft.

ASHLEY COUNTY

J. D. Houseman et al's No. 1 Boreine Farms, 660 ft. S and W, NE cor. Sec. 1-18-8.
Rigging up.

HEMPSTEAD COUNTY

A. H. Bagnelle's No. 1 Trattner & Rhinehart, Sec. 2-13-26.
S.D. 1,992 ft.

LAFAYETTE COUNTY

W. H. Harvey's No. 2 Allen, Sec. 18-19-24.
S.D. for fuel 1,500 ft.
Kamon & Neely's No. 1 Cockran, NW cor. SE SW Sec. 26-19-25.
Drlg. 2,335 ft.
Riggs Bros.' No. 1 Dubose, SE cor. SW NW Sec. 25-15-24.
S.D. 1,226 ft.

LONOKE COUNTY

J. G. Strahan's No. 1 Hardin, Sec. 18-2s-7w.
S.D. 1,780 ft.

MILLER COUNTY

Ed Donohue's No. 2 Beck, Sec. 33-15-26.
Drlg. 2,000 ft.
Duluth-Ark. Oil Co.'s No. 4 Beck, SE cor. SE SW Sec. 34-15-26.
W.O.S.R. 2,941 ft.
M. D. K. Fitzwater's No. 1 E. H. Beck, 150 ft. N and E, SW cor. NW SW Sec. 34-15-26.
Moving in rig.
Fitzwater et al's No. 1 Norson, SW cor. SE SW Sec. 20-15-27.
S.D. 2,177 ft.
King Oil Corp.'s No. 1 C. H. Schroder, 200 ft. N, 330 ft. E, SW cor. SW NE Sec. 24-14-28.
S.D. 3,167 ft.
King Oil Corp.'s No. 1 Anderson, 350 ft. E, 200 ft. S, NW cor. SW NE Sec. 16-14-27.
S.D. 1,723 ft.
C. V. Lenz' No. 6 Dale, 273 ft. N, 430 ft. E, SW cor. SE NW Sec. 24-15-26.
Drlg. 1,850 ft.
A. C. Roan's No. 1 Frost Est., 150 ft. N and W, SE cor. SE SW Sec. 8-15-26.
Set 10-in. 120 ft.
Lee Timberlake's No. 1 Frost Est., 330 ft. N and E, SW cor. SW SE Sec. 27-15-26.
Coring 2,790 ft.

OUACHITA COUNTY

F. A. Book et al's No. 1 Arnold, Sec. 24-15-16.
S.D. 2,032 ft.
S. J. Carnes' No. 1 L. Caldwell, 330 ft. S and E, NW cor. Sec. 12-14-19.
Cored S.W. sand 1,817 ft.
S. J. Carnes' No. 1 Highsmith, NW cor. NE NW C of 2-ac. tract, Sec. 25-13-18.
Rigging up.
T. J. Gaughan's No. 1 J. Humphrey, 330 ft. N and E, SW cor. NE NE Sec. 30-13-17.
S.W. and abd. 1,455 ft.
Kraft Oil Corp.'s No. 1 Rath & Cartier, 330 ft. S and E, NW cor. SW SW Sec. 32-13-17.
S.D. 1,448 ft.
J. D. Reynolds' No. 1 M. Bragg, 330 ft. N and E, SW cor. NW SE Sec. 25-13-18.
S.W. and abd. 1,405 ft.

UNION COUNTY

Alice-Sidney Oil Co.'s No. 1-B E. F. Gregory, 330 ft. N and W, SE cor. NW SW Sec. 10-17-14.
Set 7-in. 3,366 ft.
J. E. Crosbie, Inc.'s No. 1 W. E. Gregory, 330 ft. S and E, NW cor. NE Sec. 15-17-14.
T.A. 3,503 ft.
J. E. Crosbie, Inc.'s No. 2-A E. F. Gregory, 330 ft. N and E, SW cor. NE SW Sec. 10-17-14.
W.O.S.R. 3,361 ft.
Gardy Drlg. Co.'s No. 1 Craig, Sec. 35-17-15.
Tested oil and gas 2,211 ft.
Gulf Ref. Co.'s No. 49 L. Werner, 4,620 ft. N, 60 ft. E, SW cor. Sec. 5-16-16.
Set 10-in. 2,293 ft.
Reuter Oil Co.'s No. 2 Vines, NW cor. SW SE Sec. 29-18-14.
D.D. to 2,216 ft.; W.O.S.R.
H. L. Hunt's No. 15 E. F. Gregory, 330 ft. N and W, SE cor. Sec. 10-17-14.
Coring 5,630 ft.
H. L. Hunt's No. 18 E. F. Gregory, 330 ft. N and E, SW cor. Sec. 11-17-14.
Derrick.
Mrs. R. K. Jones et al's No. 1 Davis, 330 ft. N and W, SE cor. NW NW Sec. 28-16-14.
Set 7-in. 2,746 ft.; T.D. 2,765 ft.
Lion Oil Ref. Co.'s No. 6 H. L. Rowland, 330 ft. S and W, NE cor. Sec. 15-17-14.
T.A. 3,427 ft.
Marine Oil Co.'s No. 7-A W. B. Thompson, 330 ft. N and W, SE cor. SW SE Sec. 2-18-13.
Rigged up and S.D.
Joe Modisette's No. 1 Hill, Sec. 6-18-13.
Set 8-in. 2,540 ft.
Joe Modisette et al's No. 1 D. S. Sturdevant, 330 ft. N and W, SE cor. Sec. 6-18-13.
Drlg. 1,264 ft.
C. E. Murdock's No. 1 R. Pumphrey, C SW NW NE Sec. 11-17-14.
Derrick.
Reuter Oil Co., Inc.'s No. 1 J. L. Kinard, 330 ft. S and E, NW cor. SE NW Sec. 32-18-14.
Pumping 2,189 ft.; no gauge.
Earl Patterson's No. 1 C. L. Smith, 1,130 ft. S, 550 ft. E, NW cor. Sec. 29-17-14.
Moving in rig.
Grady Vaughn's No. 1 T. B. Rowland, 330 ft. S and E, NW cor. Sec. 14-17-14.
Derrick.

MISSISSIPPI
AMITE COUNTY

Mineral Resources, Inc.'s No. 1 Anderson, C NE NW Sec. 14-3n-3e.
S.D. 550 ft.

BOLIVAR COUNTY

White & Jones' No. 1 Ballou, SE SE NW Sec. 17-24n-7w.
S.D. 20 ft.

CLARKE COUNTY

Clarke County Oil Co.'s No. 1 Dora Butler, C SW SW Sec. 15-2n-16e.
Set 10-in. 63 ft.

HARRISON COUNTY

Big Ridge Oil Co.'s No. 1 Hinzin, NE Sec. 13-7s-10w.
S.D.; W.O. 1,100 ft.

HINDS COUNTY

Bob Weaver's No. 1 T. Russell & Oparka, C NW SW NE Sec. 26-6n-1e.
Rigging up.

ISSEQUENA COUNTY

Pelican Oil & Gasoline Co.'s No. 1 Martin & Bender, 300 ft. S and E, NW cor. Sec. 11-12n-8w.
S.D.; curing titles, 3,227 ft.

JONES COUNTY

Snow-Black Pet. Co.'s No. 1 Fox, 400 ft. N, 750 ft. W, SE cor. SE SW Sec. 30-7n-11w.
Drlg. 1,150 ft.

LAUDERDALE COUNTY

Bob Dalton's No. 1 Bounds, Sec. 34-7n-15e.
Arranging resume drlg. 560 ft.

MONROE COUNTY

P. J. McAlpine's No. 1 Frank Rye, Sec. 15-15s-17w.
S.D. 2,910 ft.
P. J. McAlpine's No. 1 Crook, 1,090 ft. S 90 ft. W, NE cor. Sec. 15-13s-13w.
Set 7-in. 1,880 ft.; drlg. 1,935 ft.

WALTHALL COUNTY

Mutual O. & G. Co.'s No. 1 Boyd, SW cor. SW SE Sec. 24-2n-9e.
Partly rigged up and S.D.

WARREN COUNTY

H. W. Elliott et al's No. 2 R. L. Parker, 780 ft. E, 1,570 ft. S, NW cor. Sec. 14-14n-1e.
S.D. for fuel 820 ft.

WASHINGTON COUNTY

Perkins & Dees' No. 1 Lee, 1,500 ft. E, 500 ft. N, SW cor. Sec. 33-15n-3w.
Set 10-in. 300 ft. and S.D.

WINSTON COUNTY

Jack Vale et al's No. 1 Moody, 713 ft. N, 667 ft. E, SW cor. NW SW Sec. 3-13n-14e.
S.D. 960 ft.; (corrected).

La.-Ark. Proven Fields

NORTH LOUISIANA
CADDO—BLANCHARD

M. Segall's No. 5 Sharpe, Sec. 11-18-16.
Rigged up and S.D.

CADDO—RODESSA

United Gas. Pub. Ser. Co.'s No. 1 Fosque Unit, 1,320 ft. N and E, SW cor. Sec. 28-23-16.
Drlg. 4,893 ft.
United Gas Pub. Ser. Co.'s No. 1 Johnson Unit, 1,245 ft. S, 1,365 ft. W, NE cor. Sec. 26-23-16.
Set 10¾-in. 2,100 ft.

SABINE PARISH—ZWOLLE

Alexander & Crane's No. 1 Fogman, SE cor. N½ SW NE Sec. 18-7-11.
Set 6-in. 2,373 ft.
Ivan A. Allen's No. 1 La. Long Leaf, 330 ft. N and W, SE cor. NW SE Sec. 12-7-11.
S.D. 2,120 ft.
H. C. Maulding's No. 1 Davis, 350 ft. N and W, SE cor. NE NE Sec. 2-7-11.
Rigging up.
H. C. Maulding's No. 2 DeLatin, 330 ft. S and E, NW cor. NE SE Sec. 3-7-11.
S.D. 2,250 ft.
K. C. Peterson et al's No. 1 Bowman-Hicks, 330 ft. S and E, NW cor. SW NW Sec. 2-7-9.
Derrick down.
Tex.-La.-Ark. Oil Co.'s No. 1 Pickering Lbr. Co., Sec. 3-3-12.
S.D. 2,742 ft.

EAST TEXAS (BORDER COUNTIES)
HARRISON COUNTY

R. C. Payne et al's No. 1 Lowery, E. D. Spain Sur.
P.B. to 3,524 ft.

MARION COUNTY

Ed S. Holman's No. 1 Henderson, R. Bannington Sur.
Drlg. 2,895 ft.

PANOLA COUNTY

R. W. Price's No. 1 Crawford, J. A. Williams Sur.
Set 10-in. 64 ft.
Fred Stovall Drlg. Co.'s No. 1 H. D. Ivey, P. Martin H.R.S.
S.D. for csg. 1,980 ft.
Thomason Drlg. Co.'s No. 1 Cadenhead, Jas. Smith Sur.
Drlg. 2,760 ft.

SHELBY COUNTY

Cliff Stovall's No. 1 Pickering Lbr. Co., C H. Patterson Sur.
S.D.; rig repair, 1,485 ft.
O. P. Bush, trustee's No. 1 Pickering Lbr. Co., P. W. Harvey Sur.
S.D. 730 ft.

ALABAMA
COVINGTON COUNTY

Geometer Prod. Corp.'s No. 1 Culbreath, SW cor. SW NE Sec. 8-2n-14e.
Reaming to bottom 3,300 ft.

HOUSTON COUNTY

Rice O. & G. Co.'s No. 1 Oakley est., SE cor. NW SW Sec. 9-3n-29e.
S.D.; W.O. 2,506 ft.

LAMAR COUNTY

DeSoto O. & G. Corp.'s No. 1 Gardner, Sec. 22-15s-16w.
S.D. 4,182 ft.

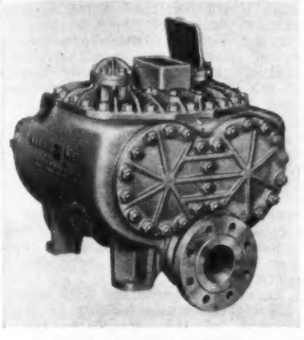
WALTON COUNTY—FLORIDA

Geometer Oil Corp.'s No. 3 Walton Land & Timber Co., Sec. 10-1s-19w.
Rigging up.

NEW AND IMPROVED EQUIPMENT

New Petroleum Meter Is Added to the Brodie Line

The Ralph N. Brodie Co., 959 Sixty-first Street, Oakland, Calif., has announced the addition of a new large-capacity meter to its line of positive-displacement meters. With a rating of 600 gallons per minute the X-500 is particularly adapted to such refinery uses as metering to and from ships, tank cars, tank farms, etc.



At many points in the petroleum industry smaller Brodie meters are widely used for accurately measuring gasoline, fuel oil, distillate, etc. They are used in barrel filling, on tank trucks, at loading racks and bulk plants and for many special applications.

Each meter of the X series, which includes sizes from 2 to 1,000 gallons per minute, is built without valves or valve mechanisms. Instead, the pistons have a dual motion which controls the liquid flowing through the meter. This ingenious design eliminates many parts used in conventional types and drastically reduces pressure drop through the meter. No by-pass is used. The X design is said to have been proven in thousands of Brodie meters now in the service of oil companies. Flow diagrams, etc., may be had by addressing the manufacturers.

NEW GRADER IS ANNOUNCED

Foote Bros, Gear & Machine Co., road machinery division, Joliet, Ill., announces its new Model "40" Stockland grader for operation with small tractors of 10 to 20 horsepower on maintenance and side road reshaping work. This grader ordinarily has a 7 or 8-foot moldboard and weighs approximately 3,200 pounds. The construction is such that the grader may be used for reshaping shoulders, clearing out ditches, etc., at which time it is operated with rear-end controls as in the ordinary grader. The controls consist of hand wheels located in a convenient position in front of the operator's platform. When the grader may be needed for road maintaining purposes, the controls may be reversed to the front of the grader and thereby arranged so one man, the tractor driver, can operate both grader and tractor.

APPLIANCES FOR BEARINGS

Data sheets showing detailed dimensions of finished, ready-to-use appliances for ball and roller bearings are now available to users of antifriction bearings. The Bearing Appliance Co. of Ardmore, Pa., is manufacturing cast-iron closures including closed covers, open covers with flingers, with felts or for leather oil seals. Fourteen sizes of covers are available and approximately 150 sizes of ball and roller bearings can be fitted in a great variety of design combinations. Many of the parts have lubricant and cleaning openings.

Notes About Trade Literature

A 16-page booklet containing much practical information concerning the use of oil well cordage, proper method of attaching cable to the tools, splicing cables and crackers, etc., may be obtained from Oil Well Supply Co. stores or by writing direct to the Plymouth Cordage Co., North Plymouth, Mass.

—

A circular available from the Axelson Manufacturing Co., Los Angeles, Calif., describes the new Axelson Perry plunger, designed to eliminate the gas pocket or trap around the plunger bottom valve.

—

Among 10 booklets announced by the General Refractories Co., 106 South Sixteenth Street, Philadelphia, Pa., are one on the uses of refractory products in oil refineries and one on their uses in boiler plants.

—

The Baldwin-Duckworth Chain Corp., Springfield, Mass., has issued Catalog K-1, on chains and sprockets for power transmission, conveying and elevating. It contains 54 pages and is of convenient pocket size. A 20-page section is devoted to practical engineering data.

—

"Power Vane" rotary tools, including drills, grinders, wrenches, woodborers, concrete surfacers, and tube end polishers, are described and illustrated in a 16-page catalog which the Chicago Pneumatic Tool Co., 6 East Forty-fourth Street, New York, has ready for mailing.

The Medart catalog No. 56-G, containing standard listings, weights and dimensions on gears, sprockets and chain, may be had by writing to Medart Co., Potomac and De Kalb Streets, St. Louis, Mo.

—

Facts about air-cooled transformers for lighting and power service are presented in a 20-page booklet mailed on request by the General Electric Co., Schenectady, N. Y.

—

The Berg cleaning tool division of the Concrete Surfacing Machinery Co., Cincinnati, Ohio, has prepared literature descriptive of a larger and more powerful cleaning tool for use in cleaning rust, scale, etc., from steel surfaces in refineries, pipe mills, etc.

—

Among articles in the current issue of Nickel Steel Topics, published by the International Nickel Co., 67 Wall Street, New York, are two of special interest to the oil industry, "New Type Unitary Draw Works Developed," and "Oil Well Winches Must Be Rugged."

—

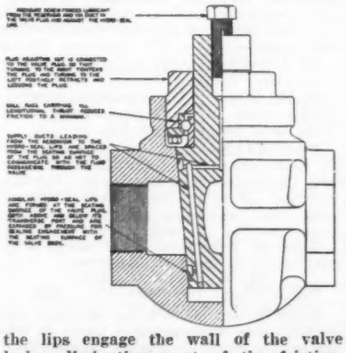
"What You Should Know About Flex-Set Preformed Construction Wire Rope," is the title of an interesting booklet of 20 pages offered by Broderick & Bascom Rope Co., St. Louis, Mo.

—

An eight-page folder illustrating and describing the Lunkenheimer "Causul" metal gas valves, is obtainable from the Lunkenheimer Co., Cincinnati, Ohio.

"Hydroseal" Plug Valve Is Developed by MacClatchie

The "Hydroseal" plug valve introduced by MacClatchie Manufacturing Co., Compton, Calif., is distinguished by the grease-expanded metal lips adjacent to the ends of the plug, which engage the wall of the valve body to insure a tight seal. According to the manufacturer these valves have no cup leathers or compressible packing, and only the edges of



the lips engage the wall of the valve body, eliminating most of the friction. The bearing surface between the plug and body is lubricated further to insure ease in turning.

It is asserted that these plug valves are not subject to invisible leakage such as may result from improperly seating of plugs and causing excessive cutting action. The lips are capable of expansion enough to compensate for distortion of the body and plug, but not enough to prevent visible leakage at the end of the plug when the plug is improperly seated. Such visible leakage warns the operator to seat the plug properly.

Tag "Cold Test" Apparatus Meets Late Specifications

The C. J. Tagliabue Manufacturing Co., Park and Nostrand Avenues, Brooklyn, N. Y., has designed a four-compartment "cold test" apparatus to meet the

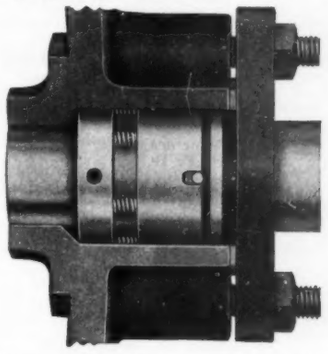
latest A.S.T.M. cloud and pour test specifications (serial D 97-34) for lubricating oils. These specifications require at least three and preferably four, cold-test baths, which must be maintained at the following temperatures: (1) Temperature, +30 to +35° F.; (2) temperature, 0 to +5° F.; (3) temperature, —30 to —25° F.; and (4) temperature, —60 to —55° F.

The compartments of this new Tag apparatus are copper-lined and well insulated with 2-inch cork on sides and bottom, making them separate cooling units. In each compartment there is an assembly of four metal jackets, mounted on a substantial metal tripod, for supporting the cold test jars and thermometers in accordance with A.S.T.M. specifications. This is the same assembly which has been used satisfactorily for many years in the Tag single-unit cloud and pour-test apparatus.

The Tagliabue company has prepared a bulletin (No. 1098) describing this apparatus in detail and giving prices.

Rotating Shaft Packing for Pumps Is Developed

A new type of mechanical seal, known as "Dura Seal" and protected by patents, has been developed by the Durametallic Corp., 2105 Factory Street, Kalamazoo, Mich., to seal more effectively power equipment such as pumps, exhausters,



etc., working gritty or corrosive liquids and gases. It is said to have given long and efficient service on acids, alkalies, and dirty liquids containing solids. It can be applied to ordinary stuffing-boxes.

A wide variety of metals and other materials may be used in the construction of Dura Seal so that it can be made to resist corrosion by practically all chemicals and that grit cannot get between the seal ring and the face of the bushing or gland.

For higher pressures a Dura Seal assembly is placed entirely within the stuffing-box and it revolves against the faced-off gland, or a special stationary bushing may be used. (See illustration.)

On moderate pressures (up to 60 pounds) the company recommends an outside assembly in which the seal ring rotates against the gland faced off and reversed or, better still, against a special bushing extending into the stuffing-box with its outer face lapped in against the seal ring of the rotating member. This bushing, whether used in the inside or outside assembly may be so constructed as to provide lubrication between the two ground sealing faces.

There are many fluids in the refinery, such as gasoline, naphtha, oleum liver, distillate oil, sour crude, and treating plant conditions where acids and strong caustic solutions must be worked, as well as gritty solutions such as clay oil, on which Dura Seal is said to have proved itself effective.

AUXILIARY RELAY ANNOUNCED

A small, sturdy auxiliary relay for use on a.c. or d.c. and suitable for switchboard or panel mounting is announced by Westinghouse Electric & Manufacturing Co., East Pittsburgh, Pa. The type SK auxiliary relay for switchboard mounting has a molded cover or molded cover with glass front. The front connected panel mounted relay uses no cover. Both types have two independent contact circuits which may be easily adjusted for circuit-closing or circuit-opening service. For two independent opening circuits, additional material must be added to the standard relay. Designed for continuous duty at rated voltage, the SK relay is obtainable for circuits up to 550 volts a.c. or 440 d.c. Ranges up to 250 volts can be used for intermittent duty up to approximately three times their continuous value. The relay can be supplied with a coil for any current value up to 5 amperes.

CLASSIFIED ADVERTISING

Royalties—Production

NEW FEDERAL SECURITIES ACT SERVICE

Weekly Service Covers All Oil and Gas Royalty Offering Sheets Filed.
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Quoted Dealers Exclusively.
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We Buy and Sell.
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Dallas, Texas.

PRODUCING OIL ROYALTY paying monthly income in half acres and upwards at reasonable prices. Federal listed. S. J. Jewell, P. O. Box 35, Tulsa, Okla.

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VAN POOL — EAST TEXAS
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PERMIAN BASIN oil structures are under development in a big way. All dealers in under-the-drill royalties, please get our new offering. It will interest you. W. J. Dobbs, 632 Wilson Bldg., Dallas, Tex.

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ROYALTY and Leases, Wheeler and Gray Counties, Texas. For quick direct deals get in touch with
E. B. REEVES,
Lock Box 475, McLean, Texas.

VAN POOL
PRODUCING OIL ROYALTY
We will sell 1 to 5 Royalty acres covering a tract which participates in the 600 ft. Oil sand contour. Base price $2700. If interested ask for SEC schedule "A" which gives full information.
E. T. MARION REAL ESTATE CO.
401-2 Slaughter Building,
Dallas, Texas.

COASTAL LOUISIANA. Invest wisely in select royalties on known geophysical structures. 208 Weber Bldg., Lake Charles, La.

WILL assemble ten thousand acre block in Eastern part Donley County, Texas, for well and reasonable price for assembling. References. Box 914, Hedley, Tex.

GULF COAST ROYALTIES
Bought and Sold.
Producing and non-producing royalties in salt dome fields of Texas and La.
ZENI OIL COMPANY
412 Esperson Bldg., Preston 4420,
Houston, Texas.

HIGH GRADE producing oil and gas royalties offered to dealers. Billie Smallwood, P. O. Box 2261, Tulsa, Okla.

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Royalties—Production

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WANT producing lease for cash and oil payments. Send complete information and price. Box 2631, New Orleans, La.

Leases—Production

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NEW MEXICO Oil and Gas Leases and royalties. Send 50 cents in stamps for new State Oil Map of New Mexico. Roy G. Barton, Clovis, New Mexico.

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Drilling deals, portable, rotary and cable tools. The Green Oil Company, First National Bank Bldg., Albuquerque, New Mexico.

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NOTED GEOLOGIST has worked out structure in Northwest Alabama, on which he claims commercial production of oil and gas is a "lead-pipe cinch." For further particulars address F. P. BORDEN, Amory, Miss.

HAVE in Kentucky several undrilled and untested structures leased for oil and gas. Have opportunity for big production. Want to get people to develop. F. L. JAMES, Albany, Clinton County, Ky.

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117-ACRE partly developed oil and gas lease in Western Kentucky. 2 oil wells, 6 bbls. settled production. Fully piped. Oil and Gas pipe line. Several inside drilling locations.
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O. G. LSE., 19-15-2, $25. Fee, Rlty. SE 7-14-2 Nr. N 1 Linn, Edmond Sector. $125. F. T. GEE, Edmond, Okla.

INDEPENDENT GEOLOGIST working ahead production NW Texas controls extensive structure 2400-2800 ft. sands, also promising shallow blks. 600 to 1200 ft., seeks financial aid, low cost development. Address Box 577, Graham, Texas.

40 ACRES LEASE for sale. Drilling ⅛ royalty, Winkler County, Texas. Section 12, Block B-12, Northeast quarter. Expires July 14/35. John Loferski, 2847 West 25th St., Chicago, Ill.

FOR SALE—A 1/16th interest in a 20 acre proven lease for $2500.00 with well completed into the tanks. Production on all sides from three different pays. The interest is being sold to complete the No. 1 well. Will divide to 1/32nd or 1/64th on same basis. Full particulars on request. Address
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Leases—Production

THE KENNA DOME

I control the Kenna Dome, the largest undeveloped magnetometer and geological structure in the State of New Mexico. The Kenna Dome is located in southwestern Roosevelt county, and to obtain the undisputed control of this structure has been the work of four years and the expenditure in excess of $15,000 in cash. While I control the entire structure, within a radius of three to six miles from my derrick location are the holdings of sixteen major oil companies, including the Humble, Shell, Magnolia and the Barnsdall. The magnetometer survey of this structure was made by Mr. Allan Hargrave, of the Simms Oil Co., and the principal geological survey on which we rely, was made by Mr. F. J. S. Sur, a prominent geologist with an international reputation. I know that the Hargrave Survey has been checked favorably by at least four major companies, and the geological report of Sur's has the supporting report of at least five other reputable geologists.

I have had negotiations with a couple of big oil companies looking to the development of this structure, and am still negotiating with one, but none of them want to take into consideration the fact that I have spent time and money on this deal. On a recent trip to Oklahoma and Texas, I was assured by land men of six major companies that they would "favorably receive" propositions to buy a spread of acreage on bottom-hole basis as soon as I have actually "started to drill a well."

I need help on the Kenna Dome—at least $20,000—to start this well and place myself in a position to present my deal to the major companies for their "favorable reception," and I am ready to make a deal with anyone who will take into consideration the time and money I have spent, and I am willing to sell bang-up leases to speculators who are willing to take a long chance and pay me what the leases are really worth. I am not adverse to accepting the money from "widows" but I want them to be able to lose if they invest, and we fail to get a producer.

This deal is big enough and good enough to interest the biggest man or company in the business and also big enough to permit the investment of a moderate amount of money from a lease buyer who can invest from $250 up for a 40-acre lease.

I believe I am going to open a great oil field of high gravity oil on the Kenna Dome, and that those who get in with me are going to profit proportionately. If you have $20,000 to $50,000 to invest, I want to make you a proposition, and if you have but $250—no less—I also want to hear from you.

I have no time for curiosity seekers, but if you are really interested in making money in oil, and will write or wire me I will send you a prepared map of the Kenna Dome, showing all of our holdings and also the holdings of some of the major oil companies, and will quote you prices on acreage, or if you will show me that you are able to invest enough money to make it interesting, I will meet you "anywhere" and personally present the deal. If you are an "oil man" I will take my chance with you because I can't fail to convince you if I personally talk to you. The deal is right, the time is right, and the man behind the deal is right and due to "click" and make a big come-back in the oil business. Write or wire me and tell me how much you are interested, and lets get together.

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All equipment in good condition.

All bidders required to deposit $2,500 cashier's check.

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P. O. BOX 391,

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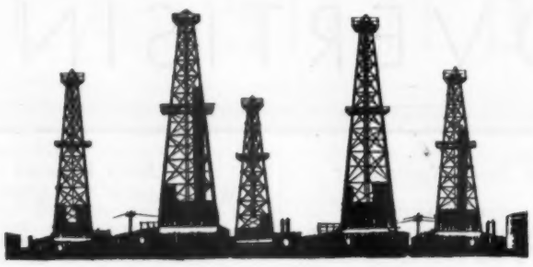

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Twin Disc Clutch Co. .....

U
Union Carbide & Carbon Co. .....
Union Carbide Sales Co. .....
Union Wire Rope Corp. .....
U. S. Steel Corp. Subsidiaries .....
Universal Motor Co. 64
Universal Oil Products Co. 21
Utility Trailer Manufacturing Co. ....

V
Vellumoid Co., The .....
Vogt, Henry, Machine Co. .....

W
Walworth Co. .....
Warren Petroleum Co. .....
Waukesha Motor Company .....
Well Machinery & Supply Co. .....
Williams & Co., C. K. .....
Williams & Co., J. H. .....
Williamsport Wire Rope Co. .....
Wilson Supply Co. .....
W. K. M. Co., Inc. .....
Wyatt Metal & Boiler Works .....

Y
Youngstown Sheet & Tube Co., The .